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ABSTRACT

Articles on a wide range of issues concerning the education system of Ireland are presented. The articles include: "Presidential Address to the ESAI Annual Conference, Thomond College, Limerick, March 1990" (J. Wilson); "Introduction to BOB--A Problem Solving Package" (L. Caul; L. Greenwood); "Coping with Impersonal Orientations in Staff Development Designs" (M. Barry); "Teaching Higher Levels of Thinking in Elementary Geometry" (K. Gentile); "Gender Issues in Classroom Dynamics: The Need for Research at Second Level" (J. Hanafin); "How Shall Staff Development Programmes be Evaluated?" (J. Gentile); "Aspects of Play in the Junior Infant Classroom" (M. Horgan); "Girls and Science: Equality in School or Society? (A case for macro and micro analysis)" (N. O'Conaill); "The I.N.T.O., the Bishops and the Clash on School Funding (1945-1954)" (N. Ward); "The Limits of Paternalism in Educational Relations" (K. Williams); "Second Level Mathematics Curricula: The Republic of Ireland in International Perspective" (E. Oldham); "The Educational Dimension of Vocational Rehabilitation" (P. Davies); "The Teaching of Senior-Cycle Religion: An Irish Perspective" (G. Bourke); "Girls into Technology: Issues Arising from the Evaluation of a Curriculum Development Project" (J. Gleeson); "Government Policy, The Church of Ireland and The Teaching of Irish 1940-1950" (V. Jones); "Reconceptualizing the Post-primary Curriculum: A Grid-matrix for the Design and Evaluation of a Core Curriculum" (J. McKernan); "Sport and Education: The Case for a Non-competitive Approach" (R. O'Donnchadha); "Values Development as Content for the Curriculum" (R. Houghton); "Ideological Conflict and Historical Interpretation: The Problem of History in Irish Primary Education c1900-1930" (A. S. MacShamhrain); "Part-time Mature Students in Higher Education: A Cast Study" (M. Morrissey and D. Irvine); "How General Ability Interacts with Instructional Methods to Produce Different Learning Outcomes" (B. Surgrue; B. Barnicle); and "Integrating Equal Opportunities in the Curriculum of Teacher Education 1988-1991: Tenet Programme Dissemination Phase" (S. Drudy and others). (DB)

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IRISH EDUCATIONAL STUDIES

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Contents

Notes on Contributors iv

Editor's Preface vi

Dr. John Wilson Presidential Address to the ESAI Annual Conference, Thomond College, Limerick, March 1990 1

Leslie Caul and Lillian Greenwood Introduction to Bob — A problem solving package 9

Michael Barry Coping with Impersonal Orientations in Staff Development Designs 18

Kay Johnson Gentile Teaching Higher Levels of Thinking in Elementary Geometry 27

Joan Hanafin Gender Issues in Classroom Dynamics : The Need for Research at Second Level 42

J. Ronald Gentile How Shall Staff Development Programmes Be Evaluated? 55

Mary Anne Horgan Aspects of Play in the Junior Infant Classroom 67

Neil Ó Conaill Girls and Science : Equality in School or Society? (A Case for Macro and Micro Analysis) 82

Noel Ward The I.N.T.O., The Bishops and the Clash on School Funding (1945-1954) 96

Kevin Williams The Limits of Paternalism in Educational Relations 110

Elizabeth Oldham Second Level Mathematics Curricula : The Republic of Ireland in International Perspective 122

Peter Davies The Educational Dimension of Vocational Rehabilitation 139

Geraldine Bourke	The Teaching of Senior-Cycle Religion : An Irish Perspective	151
Jim Gleeson	Girls into Technology : Issues arising from the Evaluation of A Curriculum Development Project	163
Valerie Jones	Government Policy, The Church of Ireland and the Teaching of Irish 1940-1950	177
Jim McKernan	Reconceptualizing the Post-Primary Curriculum : A Grid-Matrix for the Design and Evaluation of a Core Curriculum	188
Réamonn Ó Donnchadha	Sport and Education : The Case for a Non-Competitive Approach	205
Raymond W. Houghton	Values Development as Content for the Curriculum	217
A.S. MacShamhráin	Ideological Conflict and Historical Interpretation : The Problem of History in Irish Primary Education c1900-1930	229
Marie Morrissey and Declan G. Irvine	Part-time Mature Students in Higher Education : A Case Study	244
Brenda Sugrue and Bridie Barnicle	How General Ability Interacts with Instructional Methods to Produce Different Learning Outcomes	258
Sheelagh Drudy, Hugh Gash, Kathleen Lynch, Pádraig Ó Láimhín, Richard Moles, Claire Lane, Mairín Ganly, Cynthia Fogarty, Gráinne O'Flynn, Arthur Dunne.	Integrating Equal Opportunities in the Curriculum of Teacher Education 1988-1991 : Tenet Programme Dissemination Phase	271

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Editor's Preface

A few years ago, the Editorial Board and the Executive Committee of the Educational Studies Association of Ireland reviewed the editorial policy for this journal. Two broad alternatives were considered. On the one hand, the number of articles might be curtailed, the journal might have a more strictly academic character and be aimed more directly at the international community of scholars in education. On the other hand, the journal might seek to include a wider range of perspectives from teachers, research students and others, whose enduring interests in a variety of educational concerns led them to reply to the Association's call for papers for the Annual Conference. The second alternative was considered to be the more worthy one but, in deciding to combine a comprehensive and a representative local flavour with an international character in the contents, it was also agreed that the journal should be fit to take its place quite naturally on the periodical shelves of overseas libraries. Anyone who lifts this journal now from such a shelf will quickly see that there is a vibrant and wide-ranging discourse on matters of educational quality in Ireland, but also that this discourse is not pigeonholed into a number of disparate academic research associations, as is the case in many larger countries.

We are wont perhaps to complain about the shortcomings of the Republic's educational system, and when viewed in quantitative terms it is true that it fares badly by international standards. The severe cutbacks which our schools, colleges and universities in the Republic have had to endure during the eighties were enforced on levels of provision which were more skeletal to begin with than are those of the educational systems in Northern Ireland and Britain *after* the successive prunings of the Thatcher decade. When looked at from a qualitative viewpoint then, it is all the more remarkable what our educational institutions succeed in achieving. To use the crude idiom of economics — which makes astonishing strides as the vernacular of civic affairs — if other sectors of the economy produced such a high quality of product and export as does the Irish educational system, the Republic would be among the most affluent of the world's nations, rather than being, as *The Economist* recently described her in a main feature: "The Poorest of the Rich."

My predecessor in the editor's chair, Dr. McKernan of University College Dublin, more than once bemoaned the general reluctance of the Republic's Department of Education to participate in the affairs of the educational research community. The contrast with Northern Ireland is again illuminating. I share Dr. McKernan's concern and for my own part I am made uneasy by a nagging question: Could it be true, as is being frequently alleged, that the cultural commitments and moral energies which were evident in the era of O'Malley and O'Connor have now finally vanished, and that the Republic's Department of Education, apart from the Inspectorate, has acquiesced in the pecuniary culture of the Department of Finance? This is a prospect devoutly to be shunned if recent curricular initiatives are not to suffer death in infancy; if the quality of our education system is to be safeguarded, not to speak of being improved, in the decade ahead. It is my earnest hope that the debate will be again more fully inclusive; that we will be welcoming contributions from Departmental quarters at ESAI conferences, and in the pages of this journal, during my own spell as editor.

Finally, the pages of the 1991 Volume of *Irish Educational Studies* contain a great richness of insight, analysis and comment on a wide range of issues of current concern and of enduring interest to teachers, school authorities and policy makers. I'm sure professional researchers will find much to interest them here as well, but I am glad to say that having read all of the contributions, I can vouch for the general absence of jargon and I am happy to recommend this anthology of coherent, intelligent articles to anyone who has a sincere interest in the welfare of pupils and students, in the professional fulfilment of teachers and managers. May I welcome in a particular way those younger contributors who are first-time authors with *Irish Educational Studies:* namely, Geraldine Bourke, Ailbhe Mac Shamhráin, Joan Hanafin, Réamonn Ó Donnchadha, Mary Anne Horgan, Valerie Jones, and Marie Morrissey. I share with my fellow editors of the other journals of educational studies in Ireland a wish to provide a forum for the insight and perspective which is often present in secluded abundance among those whose occupational lives are given to the betterment of education, and which merits every encouragement to thoughtful utterance.

Pádraig Hogan,
Education Department,
Maynooth College,
February, 1991.

Irish Educational Studies, Vol.10, No.1, 1991

PRESIDENTIAL ADDRESS TO THE ESAI ANNUAL CONFERENCE, THOMOND COLLEGE LIMERICK, MARCH 1990.

Dr. John Wilson

Let me preface what I have to say with a cautionary tale, which I first heard from a former Secretary to the Department of Education and Science in the course of his address to an education conference in London. It concerned the Rumanian-born violinist, teacher and composer, Georges Enesco.

At one time Enesco had wished upon him a pupil of high birth, much wealth and little talent. After some months of desultory learning, the pupil decided to give a public recital. Enesco felt that he could not do other than accompany the pupil himself on the piano and he asked a distinguished pianist who happened to be staying with him at that time to turn the pages for him.

The day after, the music critic of *Le Figaro* had this to say about the recital:

> How strange it is that the man who should have been playing the violin was playing the piano; that the man who should have been playing the piano was turning the pages; and that the man who should have been turning the pages was playing the violin.

Since the man who told this story chose to call his paper Turning the Pages, I have opted instead for Shared Reflections. I am all for short titles, if only because they give nothing away and are, therefore, less restrictive in regard to what one wants to say, so Shared Reflections let it be. My problem has been that of deciding on what reflections I should share with you this evening.

First Reflection

What should a Northern President be saying to a largely Southern audience at a time when the North's education system is undergoing a management revolution? If that seems too strong a description, let me remind you of the main features of the changes taking place:

- the introduction of teachers' directed time, as a means of ensuring tighter management control of the teacher's on-the-job commitment over and above that of class-contact time;

- the availability, to the interested public, of the Inspectorate's reports on schools — this has annoyed teachers less than the tendency in the local press to quote selectively from these reports, often to a school's disadvantage;

- an obligatory common curriculum for all pupils in the 5-16 age range (throughout the years of compulsory schooling);

- obligatory pupil assessment (both teacher and task-based) at ages 8, 11, 14 and 16; the results to be reported to the pupils concerned, their parents and the Board of Governors of the school;

- the delegation of school budgets, as a means of making schools responsible for the financial management of their affairs, including in due course, the payment of teachers' salaries; there is currently much concern over the basis on which the budget is to be calculated — averaging across schools, for instance, is seen as grossly unfair to schools staffed by older (and therefore more expensive) teachers;

- the de-control of school intakes, subject to certain safeguards and in keeping with criteria drawn up by the Board of Governors of the school — in a selective system of grammar and secondary schools, such as we have in Northern Ireland, it may be anticipated that the grammar schools will benefit from this ruling at the expense of the other secondary schools;

- and, waiting in the wings, teacher appraisal (thus, the 1989 Education Reform Order has made provision for requiring the employing authorities to regularly review the performance of their teachers).

These are the particulars of the revolution. Its common features are three-fold:

firstly, an emphasis on education as a system of management by objectives;

secondly, an emphasis on educational accountability — accountability to government, to parents and to the public at large;

thirdly, an increase in the centralised direction and control of education by the Department of Education (bolstered, in large part, by an insistence from the Treasury on tighter financial control over public expenditure budgets).

As one illustration of the effect of these changes on educational practice, the Inspectorate will relinquish the advisory role it has sought to nurture in recent years and will instead be responsible for monitoring the introduction and consequences of changes.

In my own field, that of educational research, the Department of Education has indicated the need for research which is directed to issues arising from educational reform and the policy decisions which will have to be taken in regard to implementing the reforms.

I am here reminded of a story told by Lee Cronbach of the late Harry Truman, who asked his staff on one occasion to locate a one-armed social scientist to act as his adviser. He was fed up, he said, with "on the one hand this; on the other hand that." Uncomplicated answers in the Truman mould to the questions posed by planners and policy-makers are to be the preferred goals of educational research in the 1990s.

I am not seeking, on this occasion, to applaud or deplore these changes in Northern education. To paraphrase Sir Roger de Coverley, much has already been said on both sides. For example, David Hargreaves, in his address to the British Educational Research Association Conference at East Anglia in 1988, advanced a spirited defence of the proposed common curriculum. More recently, in an article in the *Journal of Curriculum Studies*, Hartnett and Naish (1990) have advanced a contrary view. The title of their article, "The sleep of reason breeds monsters : the birth of a statutory curriculum in England and Wales," is itself instructive. My own more neutral intention of this evening is to set a context, that of education in Northern Ireland as it is to be delivered in the 1990s and as it is to be held accountable for that delivery.

Second Reflection

Again, what should a Northern President be saying to the ESAI in view of the increasing extent to which the Northern education system is being looked to to help solve those deep divisions which Barritt and Carter, many years ago, referred to as "the Northern Ireland problem." There exists in the North, as we all know, two parallel school systems which serve the Protestant and Catholic communities and which are increasingly charged with sustaining those community and cultural divisions which characterise Northern society. Whether or not the school system, thus divided, has contributed, knowingly or unknowingly, to the Northern Ireland problem, the schools are being increasingly challenged to contribute to its solution. Some see integrated schooling as the answer and there are now two secondary and eight primary schools with deliberately balanced intakes of Catholic and Protestant pupils as evidence of this form of cross-community response. Others opt for collaboration between schools and a variety of shared undertakings are under way, one of which has been recently well documented by Dunn and Smith. Both approaches, integration and collaboration, have the support of government and the cross-curricular themes of Education for Mutual Understanding and Cultural Awareness are to be part of the new curriculum.

As a footnote, let me refer you to the papers of the ESAI — Co-operation North Conference which took place last October for a description of an integrated school (both North and South) and an explanation of what is meant by EMU and Cultural Heritage. The Conference papers are presently being edited by Professor John Coolahan for publication by ESAI and Co-operation North.

In the 1970s it was not unusual in the North for the schools to see themselves as havens of peace, where the "troubles" could be set aside or ignored and where pupils were protected from the harsh realities of communal violence. This perception has changed. The schools are now seen as having a responsibility for cultural and attitudinal change, as having, in the words of Malcolm Skilbeck, a reconstructionist role in Northern society.

The extent to which education can effect such change, how schools can approach these issues, how indeed they can succeed in swimming against the tide of inter-communal prejudice and intolerance poses a major challenge, the magnitude of which hardly needs emphasising to this audience.

Third Reflection

Having described two significant changes of direction in Northern education — the one managerialist in regard to reforming the cognitive map of education; the other reconstructionist in regard to changing attitudes and values — I must now reflect on the role of ESAI in regard to such developments. I am aware that to invoke such a reflection runs the risk of implying that the Association should have a corporate view, if not indeed an agreed policy, in regard to what takes place in education, North or South. That is much too wide of the mark since, in one sense, ESAI will have as diverse a response to such matters of policy as there are differences of view and interest among its members. Nevertheless, it is possible to discover, and useful to identify, certain consistencies in the Association's thinking and activities.

For example, at the level of scholarship, I have always held to the view, which I know many of you share, that we have on this island two systems of education which are interestingly different but which have been given less comparative attention than they merit. The series of North-South symposia which have featured in recent years at our annual conference has recognised this diversity. The historians among you will rightly remind us that the two systems, North and South, have a common origin and how they have chosen to diverge over the years is again a matter fit for examination.

Further back again, if we are to believe Willian Carleton, the hedge schoolmasters from my own county, Tyrone, were every bit as omniscient, and occasionally as eccentric, as those of Kerry. Keeping a close and critical eye on where education is going in the two jurisdictions is itself a worthwhile task. Indeed, it may occasionally be useful to ask ourselves whether what is happening in any one jurisdiction is likely to prove invasive of the other. As the world shrinks, and as Europe seeks to cohere, education cannot be immune from political and cultural cross-pollination.

As a further example, I would again draw your attention to last October, when the Association collaborated with Co-operation North in an invitational conference which provided an opportunity for speakers and representatives, North and South, to examine the community dimension of education and, in the Northern case, provided an opportunity to consider those aspects of the new curriculum which have been designed to bridge the community divide. The conference also heard about Co-operation North's programme for twinning schools, North and South. It so happens that this week a residential conference is taking place at St. Angela's College in Sligo, for teachers involved in the Co-operation North initiatives. The teachers have been released by their respective Departments of Education to attend the Conference and I have it on good report that the Carrickdale conference facilitated the Sligo event by showing what could be done by way of bringing together educationists from both sides of the Border. I also know that Co-operation North is keen to collaborate further with ESAI in joint North-South ventures and this is something that both bodies will be discussing in the near future.

This morning I was privileged to Chair the first session of the Sligo Conference. In bearing greetings to the Conference from ESAI I was moved to reflect that this week two Conferences, one in Limerick and one in Sligo, were taking place, at each of which educationists and teachers from throughout the island had come together to discuss and examine matters of professional interest as well as to enjoy each other's company. That must surely say something positive about the state of education, North and South.

Final reflection

What I have had to say has been quite deliberately from a Northern perspective. In case anyone should have concluded from such a one-sided view that ESAI appears to exist solely in order to sustain a North-South dialogue, let me immediately emphasise that that is but a part of its commitment in Irish education. It is a part, however, for which I make no apology. Instead, let me reiterate my belief that ESAI is well placed to facilitate a North-South dialogue in education, to promote an interest in North-South activities, to provide a forum for their evaluation and discussion and also to act as a catalyst in these matters. For example, there is currently a growing interest in promoting across-Border research initiatives and funding is currently being sought to support such work. One such proposal is for a major series of co-ordinated studies of children and adolescents, North and South, in order to identify their perceptions, attitudes and values in relation to aspects of cultural identity and with particular attention to peer-group, school and media influences in these areas. There is increasing contact between the colleges of education, North and South, at both staff and student levels. Schools are in touch with each other. Indeed, so much appears to be happening that it has been thought useful to compile a register of such activities and such is now being undertaken at the University of Ulster at Coleraine.For this purpose I recently completed a short questionnaire on the involvement of ESAI in this area. Here again the Association can help by recognising and applauding these initiatives. It can also, through its annual conference, offer a platform for presenting the outcomes of such work.

I began this address with a cautionary tale involving a novel version of musical chairs. Before I came to the podium I was reminded, in a manner befitting the occasion of the presidential address, that I should be brief since there was a musical entertainment to follow. As we all know, there is an abundance of musical talent among the Association's membership, not least among those from the South-west. It is, therefore, in happy anticipation of what is to follow that I bring this address to a close.

In doing so let me say again, on behalf of ESAI, how delighted we are to be in Limerick, which, to this outsider, appears to be experiencing an educational renaissance. I have noted, for example, that Limerick, now a university city, is hosting the annual Conference of the Association for Teacher Education in Europe in August of this year. The Educational Studies Association is particularly indebted to Thomond College for agreeing to host its Annual Conference in 1990 and for extending to us its hospitality. I have also noticed that, on these occasions, it is usual to conclude by displaying one's mastery of the language. Let me therefore, offer, as my own modest contribution, only arrived at after the most intensive coaching,..... Go n-éirí go geal leis an gcomhdháil.

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INTRODUCTION TO BOB – a problem solving package

Leslie Caul and Lilian Greenwood

BOB is a computer program that was written to help children develop problem solving skills. The package began "life" as a practical example of a compiler for use with GCE Computer Studies students. Younger children, however, became interested in the problem solving aspects of the package. The present version of BOB asks users to write programs as solutions to a series of problems of increasing difficulty.

This paper places BOB into two main theoretical contexts. On the one hand, Seymour Papert's (1980) belief in the value of computers in the classroom is used to determine both the principles underpinning the design of the package and its value in the school curriculum. On the other hand, the evaluation of the package is treated as problematic. This approach was allowed to evolve over the course of an academic year as BOB was introduced to schools.

Three schools, 2 secondary and 1 primary used BOB in their "normal curriculum." In all 53 children used the package on BBCs and COMPACTs as an integral part of the normal school curriculum. Children spent around 2 forty minute periods a week working on BOB. In the course of this evaluation BOB was seen to be influential in encouraging children to plan their work carefully and as an aid to the development of good keyboard skills. Younger children were very keen to use the package and to work through the problem solving exercises quickly. Unlike Papert's work, BOB tends to suggest that teacher support and good sensitive control of the exercises were essential for success. BOB made a contribution to understanding the role of programming in the curriculum and indicated that relatively young children were able to cope adequately with abstract problems.

Classroom Application

The application of BOB in the ordinary classroom situation was an exciting and challenging experience. BOB was introduced to 3 schools - Bruslee Primary School, Lurgan Junior High School and Forthbridge High School in a classroom context. However, classroom applications are not without their difficulties. Two issues arise for critical comment. Firstly, the organisation of the classroom and learning sequences are of prime importance in using the package. Bruslee, a two teacher school, was ideal in that the children were comfortable in working in groups and as individuals. This was very apparent in some of the sessions in the school when the children were working on BOB. Nevertheless, not all classrooms lend themselves so readily to this style of approach. In this context the number of machines and the machine user ratio was important. In Bruslee Primary School this ratio was 4:1, Lurgan Junior High School 6:1 and at Forthbridge High School a network was used. When one of the COMPACTs at Bruslee was out of action the pressure on the other machines increased immeasurably.

It is not an easy task to encourage children socialised to "received knowledge" to work on their own independently of the teacher. Yet, the role of the teacher is paramount to the success of introducing children to programming skills. In this instance the evidence contained in this paper suggests a formative and positive role for the teacher. In Bruslee Primary School there was a tendency for the quicker children to race ahead and to apparently not require much teacher intervention. Also the difficulties the younger children experienced together with the lack of progress of slower children necessitated and captivated much of the teacher's time. Some of the work of the quicker children became "slip-shod" and at times extremely careless. There was a growing tendency among all the children for competition to develop to see who was furthest on in the exercises. This further increased the propensity towards careless work.

There is a clear role for the teacher in introducing children to programming skills. Firstly, working with BOB required a strong commitment on behalf of the teacher regarding problem solving and the use of the micro. Where less than full commitment was evident children tended to lose interest quickly. On the other hand earlier work shows amply what can be achieved in an active and well supported school. Secondly, and as indicated earlier the teacher must be comfortable with a form of classroom management that facilitates a flexible approach to learning. Many teachers in Northern Ireland would have considerable difficulties with an "open learning approach." Thirdly, the teacher must, if programming skills are to be mastered, have more than a sympathy for this type of approach. If the teacher does not fully understand the complex issues involved difficulties can arise.

Of the three schools involved in the project Bruslee Primary School (25 pupils), the only primary school, proved to be must successful. Forthbridge High School (17 pupils), because of the lack of support, could not motivate its group of girls to become interested in the package. A group at Hopefield High School, who worked with BOB outside the formal curriculum lost interest quickly. This group, therefore, has not been included in the evaluation. The boys at Lurgan Junior High School (11 pupils) apparently completed the set of examples; however, they were unable to demonstrate a degree of competence when visited in June, 1989. The primary school "survived" probably through the persistence of the Principal and the energy of the writers.

The inter-relation of good computer techniques, programming skills and problem solving strategies provided a "powerful environment", yet one which made considerable demands on the teacher as well as the pupils. It was only through continual and concentrated support that programming skills and problem solving can apparently flourish in the classroom.

The package was introduced in the classroom to children with a wide band of ability. Those children who did not score highly on Raven's Progressive Matrices had difficulty. Normally children whose scorers fell below the 75th percentile on the Raven's Tests found the programme difficult. In this context the sample was composed of groups where 40% of the Bruslee sample, 80% of those children at Forthbridge and all the boys at the Junior High School were placed above the 75th percentile on Raven's Progressive Matrices.

The Development of Cognitive Skills

There was a continual reluctance in two of the schools to test solutions adequately. This may have been due to the competitive spirit that developed among children to see who was furthest on in terms of the examples in the User's Guide. Many of the "abler" children continuously raced ahead. However "testing" was to many users a new concept and particularly one they did not come into contact with regularly in school. The children were also reluctant to "re-cycle programs." This failure to build on previous ideas may also be a legacy of a set of dominant classroom values.

Some children had difficulty with the idea that there could be different correct solutions to the same problem. If a child saw a different solution to their program, that child was often reluctant to "enter" their ideas into the computer. Again deeply held "positivistic" school-formed values may have been influential in shaping children's thought patterns.

There was a continuing tendency in children's work for the solution to be built from primitives and not procedures. Users tended to see repeating patterns as procedures. They had, however, difficulty in the construction of procedures; often children tended to think initially in terms of the language (BOB). They did not grasp the use of the language as a problem solving tool.

A general problem was evident among children. They all had problems with WHILE...DO statements. This continuous loop was a fundamental departure from both the other constructs of the language and many of the concepts generally encountered in school.

Those children who successfully worked through the USER'S GUIDE, were normally children who scored around the 75th percentile on Raven's Progressive Matrices; not the majority of users were able to display the capacity to break down a problem, plan a solution, write a program, test it manually and at the computer. Most children, however, were good at "debugging" and traced through their programs effectively. Time did not allow further work with some of the slower children and it is difficult to formulate ideas about this group of children's progress and development.

In general terms an evaluation of BOB can be discussed under the following headings (see Caul and Greenwood 1989 and Greenwood and Caul ESAI Dublin 1989). The work undertaken over a period of four years was qualitative in nature and reflects the main concerns of Papert in his analysis of classroom based research that 'good' work does not necessarily need empirical justification; however this does not absolve the authors from the need to support their main contentions.

1. To what extent do children improve their problem solving skills using BOB?

The package provided users with a structure for problem solving. This approach was both implicit and explicit to the package and the language. BOB required users to:-

(a) Read and comprehend a problem.

(b) Break down a problem into smaller parts.

(c) Plan a solution in English.

(d) Write a program using BOBs language constructs.

(e) "Enter and save" a program using a word processor.

(f) Use the operating system.

(g) Test the solution for all cases.

(h) "Debug" and amend the solution where necessary.

The package was largely successful in helping users internalise the structure of the problems introduced in the project. Many children were able to demonstrate an ability to break down problems into constituent parts. Users varied, however, in the degree of success they achieved in some aspects of their work. The question remains as to what degree of transaction exists between the specific use of the package and curriculum in general. Cross curricular work, IT, keyboard work and computer confidence was positive. This was demonstrated by the children's confident use of the computer and the display of keyboard mastery that rapidly became an integral part of classroom life. It was stimulating to see children who thought that a computer was a fundamental part of learning and available as individualised resource that could be used in the same way as a calculator or indeed a reference book.

2. Can children, using BOB, develop problem solving skills without direct teacher intervention?

It is in this area that the evidence collected over the last year is unequivocal. Teacher intervention was essential for the successful operation of the package. "Help" was not required primarily as support, rather as a means of ensuring that programs were successfully operated and adequately tested. It is in this aspect where BOB needs to be strengthened. A mechanism must be found to stop users racing ahead with examples before they have been thoroughly tested and checked.

3. Do individual children have a specific approach to problem solving?

Two variables were important in answering this question. Firstly, the package imposed a model of thinking on users. In this context there was little scope for self-expression in problem solving. Secondly, strong teacher intervention demanded good planning, proper procedure names, structured programming and thorough testing. Where this variable was absent users tended to be "all over the place" with regard to their work.

4. Are children with higher IQs better problem solvers than children with lower IQs?

There was little doubt that the package enabled children to explore complex and difficult issues. However, in almost all cases children who scored highly on Raven's Progressive Matrices were more successful problem solvers. However, IQ scores (AH4's) were not as powerful as discriminators as were the problem solving tests. Children scoring about average on AH4s were not always good problem solvers as shown by BOB while Raven's Tests did discriminate between users at both the primary and at the secondary levels.

5. What age range of children would benefit from working with BOB?

If Piaget's (1955) theory is correct in all cases then the package would be valuable to pupils of 14+ years. This, however, was not the case in schools. Children of 8 and 9 years benefited from using the package. The most able problem solver was 12+. Clearly the goals of using the package influence how the package is used. In most cases the influence of the classroom teacher was of paramount importance.

Children's Learning and IT : a new agenda for research

IT poses a range of problems for teachers in evaluating its potential for schools. In particular there is no specific theory of CCI (Children Computer Interaction). Part of this deficiency comes from a lack of imagination on the part of teachers in IT in schools. Certainly it is difficult to conceive of a need for new theoretical principles when schools use slow computers and inefficient software.

Yet concern must be posed in terms of IT that will attain a more sophisticated level of application. Such systems may require the use of new concepts of intentionality and meaning in understanding children's use of them. Such uses may not lend themselves to any of the - as yet new - post-Piagetian conceptualisations of learning. (see Driver, R. and Scanlon, E. 1989).

While as yet incomplete, cognitive sciences seem to offer a means of decoding Children's Computer Interaction. Firstly as Scaife (1989) argues that these sciences offer techniques for producing situations that can be directly investigated in terms of IT and learning. Secondly, cognitive science offers a range of concepts that can be used to model those learning processes and a vocabulary for communicating the nature of a child's understanding of IT itself.

AI offers an exciting prospect for educational purposes, as does Hypermedia. The use of microworlds can remove some of the strictures on children's thinking and reduce to some extent limitations on self-discovery. As in this account of BOB the learning experience can be structured to build on a small stock, or should we say stack, of primitives to a fuller representation of the cognitive domain. In theory there can be a sensitive mapping of the child's mental model and the contingencies contained in the program (see Greenwood 1989). As described above children can work at their own speed, build up procedures from simple rules and enhance their reasoning capacity.

However, how are we to model such learning? The use of a programming language such as BOB or LOGO in the more conventional sense can make precise our understanding in a variety of learning situations. For example, BOB enabled the authors to compare the thinking of children of different ages and abilities. Previous studies of IT have seen the computer as a variable in the learning situation in the same way as psychological theory defined its constituent parts (see DeCorte's evaluation of the application of LOGO on the classroom). However a more imaginative and creative approach could begin to conceptualise the computer in a novel and sensitive way. BOB has been illustrative of an approach that was conscious of both the psychological issues and the process of modelling solutions. Yet BOB was unable to successfully marry both concerns in a convincing manner.

The future of IT in education depends upon the interaction between children's developmental skills and the design of modelling systems. The next phase of our work must explore and elaborate an extension of the basic theoretical issues of learning. While BOB enabled an articulation to be grounded in classroom practice, further research needs to reflect more sensitively ideas from computer systems and from human learning theory. Such an analysis should address the characterisation of a learning system and the internationalisation of its properties. Thus educational theory may influence computer science and not, as has been the case the reverse.

An Explanatory Note on IT

The proposed introduction of IT into Northern Ireland schools as a cross-curricular theme (The Way Forward 1989) introduces a series of new questions about the utility of programming packages such as BOB. The Common Curriculum in Northern Ireland apparently settles the formerly on-going debate about Computer Studies and Programming. Only the most able children will be expected to write simple programs (IT curriculum target Level 2) and edit work on a word processor. This curriculum target clearly calls into question the utility of a "BOB like package" which aims to introduce all children to programming skills. However, it would appear to be both presumptuous and indeed foolish to disregard the influence of Papert and his claims for children and computers in the classroom. Given all the limitations of using BOB in the classroom the outcomes are more optimistic than they are pessimistic. Children benefited in many and various ways from using the package. Can we deny children the chance of such liberation from the dominance of the machine. Programming in a simple language such as BOB can be a good classroom discipline. It develops both thinking about computers and introduces good keyboard skills.

The development of cognitive skills using BOB was heavily influenced by the ability, sensitivity and energy of the classroom teacher. The package was not "powerful" enough on its own to justify or to approach any of the claims Papert made for the application of computers in schools. That is not to say that BOB was unsuccessful, but rather to argue that although qualitative changes occurred in children's thought, the computer alone and BOB were only a small part of the construction of the total experience. As one teacher said:

> "It's amazing what you can do with a 4 by 4 grid"

If you would like more information about BOB and how our work is progressing contact Lilian Greenwood at the University of Ulster at Jordanstown.

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COPING WITH IMPERSONAL ORIENTATIONS IN STAFF DEVELOPMENT DESIGNS

M. Barry

Many of the skills used by workshop designers are not readily shared among members of the education profession. While almost all educators have had a curriculum course along the way, these courses provide no special skill guidelines for sequencing and designing training programs for adult learners. Knowing what problems to anticipate makes good sense. Andrews in his 1979 discussion of workshop design discusses the usefulness of anticipation and the ability to cope with problems likely to come from learning orientations with groups.[1] Use of type theory from the Myers-Briggs Type Indicator to help understand the likely reactions of participants in staff development can be extremely helpful. Principals and school administrators are found to have many common personality preferences as do specific groups of teachers. This group sharing of personality traits among teachers and among principals and administrators is not, however, inclusive. The aforementioned commonalities within the differences between groups are measurable using the Myers-Briggs Type Indicator.

In this discussion a context is developed for describing the Myers-Briggs Type Indicator for learning preferences and personality orientations. A focus on the characteristics of impersonal orientation is made. And finally, strategies essential to the design of staff development activities for those who share the impersonal orientation characteristics are delineated.

Explanation of the Myers-Briggs Type Indicator

In the 1950s Isabel Myers and her mother, Katheryn Briggs, devised the Myers-Briggs Type Indicator (MBTI), an instrument which identifies sixteen different patterns of personality characteristics and preferences based on Carl Jung's theory of type. Since that time, the MBTI has been thoroughly researched with millions of individuals. The MBTI has been correlated with cognitive style, vocational preference, Scholastic Aptitude Test scores, diagnostic problem solving abilities, job performance, job environment, teaching style, management style, and executive personality profiles.[2]

The purpose of the MBTI is to depict and interest individual differences and their relationship to the theory of psychological types as described by Carl Jung in his 1921 book, *Psychological Types*. The MBTI has been reviewed, revised, validated, and honed to efficiency while being used. For example, the present Form G of the MBTI consists of three parts, the first part requires the following type of forced choices:

1. When you go somewhere for the day, would you rather
    (a) Plan what you will do and when, or
    (b) just go?

2. If you were a teacher, would you rather teach
    (a) fact courses, or
    (b) courses involving theory?

The second part of the MBTI consists of word pairs from which one must be chosen for greater appeal:

27. (a) scheduled (b) unplanned
28. (a) gentle (b) firm

In the third part the respondent answers questions according with those feelings which are closest to their own:

72. Would you say you
    (a) get more enthusiastic about things than the average person, or
    (b) get less excited about things than the average person?

73. Do you feel it is a worse fault to be
    (a) unsympathetic, or
    (b) unreasonable?

The directions for the MBTI emphasise the fact that there are no right or wrong choices and that all preferences, attitudes and resultant types are valuable:

> PURPOSE: This is a set of questions for finding out how you like to look at things and to go about deciding things. The questions are not important in themselves but your preferences are, because these preferences make people different in a lot of valuable ways — interested in different things, good at different things, and likely to enjoy and succeed in different kinds of work.

> It is easier to live and work and get along with people if you know about these differences and how valuable they can be.

The MBTI produces a self-report which contains and explains the four basic separate indices: Extroversion--Introversion (EI), Sensing--Intuition (SN), Thinking--Feeling (TF), and Judgement--Perception (JP).[3] It also describes the personality type into which the respondent falls. The respondent is free to accept all or part of the basic description as part of his/her self-portrait or to reject the description alltogether. For the great majority of MBTI takers, the reaction is a definite acceptance and a feeling that *at last someone understands me*.

Overview of Jung's Theory of Psychological Type

A Major part of Jung's theory of type is his division of people into complementary attitudes, Extroverted (E) and Introverted (I), and orientations to the outer world of Judgment (J) and Perception (P). Jung's theory also consists of four functions, S,N,T and F. these functions are subdivided into perceptive activities--Sensing (S) and Intuition (N) and two kinds of judgment--Thinking (T) and Feeling (F).[4] Jung when speaking of the effect of differing personality types explained that everyone's perception and cognition are subjectively conditioned. He described the Introvert attitude as "the world exists not merely in itself, but also as it appears to me."[5] Another good example of Jung's type theory is seen in this reference to the attitudes:

> The attitude types . . . are distinguished by their attitude to the object. The introvert's attitude is an abstracting one; at bottom he is always intent on withdrawing libido from the object, as though he had to prevent the object from gaining power over him. The extrovert, on the contrary, has a positive relationship with the object. He affirms its importance to such an extent that his subjective attitude is constantly related to and oriented by the object. The object can never have enough value for him, and its importance must always be increased.[6]

According to Jung, the primary functions, thinking and feeling, sensing and intuition, as defined in type theory, cannot contradict. One primary function must always be clear and "the presence of a second function of equal power is naturally ruled out." The secondary functions can, however, be readily paired with primary functions if the relationship is not antagonistic. In fact, it is the pairing of the primary functions which results in the whole person.

> The resulting combinations present the familiar picture of, for instance, practical thinking allied with sensation, speculative thinking forging ahead with intuition, artistic intuition selecting and presenting its images with the help of feeling-values, philosophical intuition systematising its vision into comprehensible thought by means of.a powerful intellect, and so on.[7]

Personality Types as Defined by the Myers-Briggs Type Indicator

Sixteen types are derived from the attitudes, functions, and perceptive activities delineated in Jung's theory of type. Gordon Lawrence in *People Types and Tiger Stripes*, a book written for educators about the MBTI, reports the following shorthand versions of the preferences and resulting types.[8] This article is concerned mainly with those preferences which appear in the bold-faced type below:

The Person interest flows mainly to —
EXTROVERSION, the outer world of actions, objects and persons.

or

INTROVERSION, the inner world of concepts and ideas.

The Person prefers to Perceive —
SENSING, the immediate, real, practical facts of experience and life

or

INTUITION, the possibilities, relationships, and meanings of experiences.

The Person prefers to make judgements or decisions —
THINKING, objectively, impersonally, considering causes of events and where decisions may lead.

or

FEELING, subjectively and personally, weighing values of choices and how they matter to others.

The Person prefers mostly to live —
JUDGEMENT, in a decisive, planned, and orderly way, aiming to regulate and control events

or

PERCEPTION, in a spontaneous, flexible way, aiming to understand life and adapt to it.

The sixteen types, briefly:

ENTJ, intuitive, innovative ORGANISER;
ESTJ, fact-minded, practical ORGANISER;
INTP, inquisitive ANALYSER;
ISTP, practical ANALYSER;
ESTP, REALISTIC ADAPTER-material things;
ESFP, REALISTIC ADAPTER-human relations;
ISTJ, analytical MANAGER-FACTS & DETAIL;
ISFJ, sympathetic MANAGER-FACTS & DETAIL;
ISFP, Observant, Loyal HELPER;
INFP, imaginative, independent HELPER;
ESFJ, practical HARMONIZER;
ENFJ, imaginative HARMONIZER;
INFJ, people-oriented INNOVATOR-ideas;
INTJ, logical, critical INNOVATOR;
ENFP, warm, enthusiastic CHANGE PLANNER;
ENTP, analytical CHANGE PLANNER.

Impersonal Learning Orientation

This discussion is aimed at only one of the possible groups described by the MBTI. Those teachers or administrators who prefer (1) thinking on a thinking-feeling continuum, and (2) those who prefer sensing, for whom practical facts are most important versus an intuitive preference for whom future and new possibilities are important. These learner preferences are likely to make up the majority of learner preferences in most groups of educators attending staff development programs.

For example, in one Florida school district, all 31 principals indicated a preference for sensing on the MBTI. And MBTI records at the Center for

Psychological Type, at the University of Florida indicate that out of 1,024 elementary and secondary school administrators, more than one-half preferred sensing and thinking. From the same source, sixty-two percent of 804 teachers in an elementary school sample preferred sensing. Both educational administrators and teachers easily have among their members more judgmental types than those who prefer perception.[9] As learners, these people tend to experience more success when told the objectives and how one is going to achieve them. Judy Arin-Krupp, in her chapter on Staff Development and the Individual, from a recent book published by the National Staff Development Council, describes such learners and lists various strategies and practices which are sensitive to their learning preferences.[10]

Inservice Design Strategies

Below are listed some workshop design strategies which take into account Jung's theory of type and the sixteen types as defined by the Myers-Briggs Type Indicator:

1. Most persons attending training or inservice programs in education will likely prefer a structured, logical, step-by-step approach to learning. A minority will prefer to explore on their own and construct their own time schedule.

2. Research articles and/or demonstrations that are consistent with the concepts being learned will be valuable for influencing members who prefer a logical and practical approach to learning.

3. The use of simulations is often perceived negatively unless they fit into an overall sequence. Educators with impersonal orientations participating in staff development activities will often view simulations as not relating to content especially if they involve human interaction.

4. Educators who prefer an impersonal orientation do feel, but usually do so after a logical process has been reviewed in their own minds. Feelings are not easily discussed at first, but with a design that has a logical sequence feelings can be explored and shared.

5. Educators who have strong impersonal orientations will need structure and are likely to be critical at times in group discussion. Criticism comes naturally and staff developers will need patience to allow these persons to express themselves and the courage to not allow the group to become directed away from primary learning goals.

6. Early involvement of a faculty in staff development planning allows for conflicting preferences or orientations to be negotiated before the activity actually begins.

7. School principals may respond better to staff development proposals from faculty or from outside persons if the staff development plan has clear and rational objectives and a realistic and factual explanation.

8. In order to grow, all people need to learn both thinking and feeling orientations. To carry out a truly challenging staff development project, the planner(s) should incorporate both orientations. Resistance to expressing feelings will be normal for many faculty members, but this should not cause designers of staff development to avoid inservice designs that include affective content.

In summary, the research obtained over the years from the Myers-Briggs Type Indicator provides a context for assisting in staff development designs. By identifying the learning preferences of participants, designs can be creatively produced and sequenced into staff development programs which not only meet the primary objectives but also satisfy the learning priorities of subgroups. Finally, when the learning preferences of the subgroups are considered, specific strategies can be employed and certain behaviours can be anticipated which will assist in the overall success of the staff development activity.

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TEACHING HIGHER LEVELS OF THINKING IN ELEMENTARY GEOMETRY

Kay Johnson Gentile

It is widely acknowledged that a substantial portion of mathematics curricula at all levels should consist of geometry (NCTM, 1989). Literally meaning "earth measure," geometry is the study of spatial relationships of all kinds, relationships that can be found in the 3-dimensional space we live in and on any 2-dimensional surface in this 3-dimensional space. Because geometry is such an important part of the spatial world in which we live, it provides educators with an opportunity to provide students with experiences which may foster excitement and a commitment to explore and discover meaningful connections to their geometric world.

Unfortunately, the teaching of geometry in U.S. elementary and middle schools is currently approached in a haphazard fashion at best. All too often its importance is not seen and it is either squeezed into the curriculum at the end of the year, or simply left for high schools to worry about (NACOME, 1975; Porter, 1989). When geometry is included in elementary mathematics, the focus is mainly on low level thinking tasks, such as identifying and labelling geometric figures (Kouba et al., 1988; Battista and Clements, 1988; Porter, 1989). There is currently little opportunity for students to develop conceptual understanding of geometry and problem solving skills.

Geometry deprivation in American students was evident when the International Association for the Evaluation of Educational Achievement (IEA) discussed the results of the Second International Mathematics Study (McKnight et al., 1987). Achievement for the U.S. was among the bottom 25 per cent of all participating countries. The IEA went on to say that this was a reflection, to a large extent, of teachers' poor coverage of the geometry curriculum. Lack of coverage, plus elementary curricula and instructional practices in which there is little emphasis on the development of conceptual understanding and problem solving, are usually cited as sources of the problem (Porter, 1989).

The recently adopted Curriculum and Evaluation *Standards* (i.e., guidelines for reorganising mathematics curricula) from the National Council of

Teachers of Mathematics, addresses this issue by stressing the importance of geometry in elementary and secondary curricula. Furthermore, the *Standards* call for geometry curricula to emphasise the development of conceptual understanding and problem solving skills in students.

The Van Hiele Model of Geometric Thought

The van Hiele model of geometric thought is a possible framework for organising geometry curricula congruent with the spirit of the *Standards*. The van Hiele model of geometric thought emerged from the doctoral works of Pierre van Hiele and Dina van Hiele-Geldof. Pierre van Hiele's dissertation formulated the levels and principles designed to help students gain insight into geometry. Dina van Hiele-Geldof's dissertation focused on a didactics experiment to raise students' thought levels.

Both Pierre and Dina, experienced mathematics educators in Montessori secondary schools in the Netherlands, were disappointed by their students low level knowledge of geometry. The van Hieles believed student success in secondary geometry was dependent upon their (the students) ability to think at a relatively high "level." In order to think at this high "level," students needed to have had experiences in elementary geometry focused on lower level thinking exercises and tasks. The van Hieles' research postulated that students' difficulties with secondary geometry was a result of their lack of receiving appropriate geometric instruction (i.e., instruction congruent with appropriate levels of thinking for elementary students) in the elementary grades.

According to their theory, students progress through successively more complex levels of thought in geometry (van Hiele, 1959; van Hiele, 1986; van Hiele, and van Hiele-Geldof, 1984). Both the number and numbering of the levels have been variable. In the following adaptation six levels will be used. The rationale for this is twofold. First, although van Hiele's recent works have described three rather than the original five levels, both empirical evidence and pedagogy argue for maintaining finer delineations. Second, empirical evidence also suggests a level that is more basic than van Hiele's first level (Usiskin, 1982; Mayberry, 1983). The levels follow:

Level 0 — Pre-recognition

At the pre-recognition level, students perceive geometric shapes, but perhaps because of a deficiency in perceptual activity, may perceive only part of a shape's visual characteristics. Thus, they are unable to identify many common shapes. They may be able to discriminate between curvilinear and rectilinear figures but not among them. For example, they may see the difference between a square and a circle, but not between a square and a triangle.

Level 1 — Visual

At the visual level, geometric figures are recognised by their shape as a whole, that is, by their physical appearance, not by their parts or properties. Discrimination is based on sight alone, as opposed to cognitive reasoning. For example, a student at this stage would be able to recognise a square, but not recognise its properties (i.e. a square has four equal sides, four right angles, and opposite sides are parallel). If you ask students why the figure is a square, they would possibly respond that it is a square because it looks like a square.

Level 2 — Descriptive/Analytic

At this level students begin to analyse geometric concepts. Through observation and experimentation, they begin to become aware of the fact that figures have certain special properties. If you ask students why the figure is a square, they are likely to say that it is a square because it has four equal sides, four right angles, and opposite sides are parallel. However, they do not yet see relationships between properties or interrelationships between figures (i..e they do not yet see that a square is also a parallelogram and a rectangle.

Level 3 — Abstract/Relational

At the abstract/relational level, interrelationships of properties both within figures (i.e. in a rectangle, opposite sides being parallel necessitates opposite angles being equal) and among figures (i.e. a square is also a rectangle and a parallelogram because it has all the properties of both) are recognised. Students do not yet see how the logical order could be altered, nor do they see how to construct a proof starting from different or unfamiliar premises.

Level 4 — Formal Deduction

At this level, students prove theorems deductively and establish interrelationships among networks of theorems. They can also discern more than one way of developing proof to a problem. Distinction between a statement and its converse can be made.

Level 5 — Rigor/mathematical

Geometry is seen in the abstract. Students can work in numerous systems — that is, non-Euclidean geometries can be studied and different systems can be compared.

(It should be mentioned that levels 0 through 3 are considered appropriate for the study of elementary geometry, with levels 4 and 5 appropriate for the more formal study of geometry taught in secondary schools, colleges and universities).

The theory has the following defining characteristics:

1. For students to function effectively at each level, they must have learned the strategies of the preceeding levels. Progress from one level to the next is more dependent upon instruction than on age or biological maturations.

2. Concepts implicitly understood at one level become explicitly understood at the next level. "At each level there appears in an extrinsic way that which was intrinsic at the preceeding level" (van Hiele, P.M., 1984, p.246). For example, at level 1 (visual) students could differentiate between a square and a rectangle although they were not cognisant of specific properties. At level 2 (descriptive/analytic) students study the square and rectangle allowing implicit conceptions to become explicit objects of study.

3. Each level has its own language. "Each level has its own linguistic symbols and its own system of relations connecting these symbols. A relation which is 'correct' at one level can reveal itself to be incorrect at another" (van Hiele, 1984, p.246). For example, figures may have more than one name (class inclusion) — a square is also a special kind of rectangle. When a student is at level 2 he does not see that this kind of nesting is possible. At level 3 understanding this notion is fundamental.

4. Problems occur when the student is at one level of thinking and instruction (e.g. curriculum materials, vocabulary of teacher, etc.) is taking place at a different level. When this happens student learning and progress may not occur.

Research conducted during the past ten years provided evidence supporting the efficacy of the model for assessing student understandings of certain geometric concepts (e.g. polygons) via levels of thinking (Usiskin, 1982; Burger, 1985; Burger and Shaughnessy, 1986; Fuys et al., 1988). It also revealed that instructional materials could be designed to match levels, as well as facilitate student growth through the levels (Burger, 1985; Burger and Shaughnessy, 1986; Fuys et al., 1988). As a result of this accumulating evidence, the call went forth for initiating future research projects which would (1) devise level descriptors for geometric concepts other than polygons (e.g. transformations, symmetry, measurement, etc.); (2) create elementary (grades K-6) and middle school (grades 7 - 9) geometry curricula based on these level descriptors; and (3) actually implement and test, in the classroom setting, the effectiveness of van Hiele based curricula. The Clements/Battista Logo-Based Geometry Project undertook all three of these challenges.

AN EMPIRICAL STUDY OF THE EFFICACY OF THE CLEMENTS/BATTISTA/ VAN HIELE-BASED LOGO GEOMETRY CURRICULUM

Method

The present study attempted to provide an evaluation of one strand — the motions strand — of two curricula based on the van Hiele model. The first curriculum was the Clements/Battista Logo-based geometry curriculum which uses specially designed Logo computer programs intended to facilitate advancement through the levels. The second curriculum was a specially designed curriculum, exactly like the Clements/Battista curriculum, except for the inclusion of non-computer activities (i.e. paper and pencil, tracing etc.) in place of Logo.

Specifically, the study examined the effects of both these environments — computer and non-computer — on 223 fifth and sixth grade students' achievement in "motions" geometry. The design was a 3 x 2 factorial, with independent variables being treatment and gender respectively. There were three treatment groups:

1. Logo motions : treatment 1 — three classes (two fifth grade classes and one sixth grade class) instructed in the motions strand of the Clements/Battista Logo-based geometry curriculum.

2. Non-Logo motions : treatment 2 — three classes (two fifth grade classes and one sixth grade class) instructed in the curriculum using more traditional, non-computer activities.

3. Non-treatment control — three classes (two fifth grade classes and one sixth grade class) receiving no instruction in motions and serving as a baseline control group.

The motions unit consisted of eight lessons focusing on properties of symmetry, differentiating among the three motions (slides, flips, and turns), and using motions to determine congruence of geometric figures. Figure 1 (from the motions unit of the Clements/Battista curriculum) shows examples of the three motions taught. Brief descriptions of the three motions follow:

Slide (Figure 1.A.) -- In a slide there is no turning. All points on the figure are moved the same amount and the same direction. We see examples of sliding motions in our homes in sliding doors and sliding drawers.

Turn (Figure 1.B.) — To specify a turn, it is necessary to have a specific direction (e.g. right or left, clockwise or counterclockwise), the amount of turn in degrees, and the point about which the figure is being pivoted (i.e. the point is technically called the turn center). Turning a door knob or door key, or winding a watch are common examples of a turn.

Flip (Figure I.C. — A figure's flip image is like a mirror image with the flip line being the perpendicular bisector of the segment that joins a point on the figure to the same point on its mirror image. Whenever one motion results in the mirror image of the original figure, that motion is a flip.

FIGURE 1

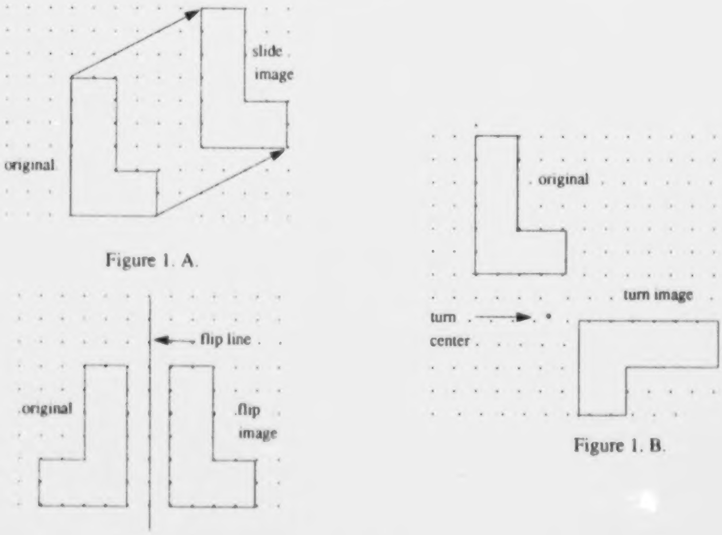


Figure 1. A

Figure 1. B.

Figure 1.C

Because the motions unit was designed to develop spatial visualisation skills (i.e. via activities which required students to predict outcomes of motions by mentally manipulating figures and then verifying their prediction by actually performing the motions), the study also examined the relationship, if any, between gender and spatial visualisation ability. From this 3 x 2 design, several hypotheses were tested concerning treatment, gender and their interactions as follows:

1. Was there an effect of treatment on achievement and level of thinking?
2. Was there a difference in achievement and level of thinking between boys and girls?
3. Did gender interact with treatment (e.g. do males perform better in the Logo environment than females)?

The study began with the administration to all participating students, of a two-part pre-test (i.e. an assessment measure of the Clements/Battista curriculum designed to be an overall general achievement test in geometry) in the fall of 1988, prior to beginning instruction in geometry. Scores from the pre-test were used to establish whether there was equivalence among the classes and treatment groups prior to the beginning of the study.

The two-week motions unit was taught during the Spring semester to the two treatment groups (Logo and non-Logo). Upon completion of instruction in the motions unit, the motions post-test (i.e. an assessment measure of the Clements/Battista curriculum) was administered to all classes (the nine classes in all three treatment groups) to assess knowledge of motions concepts, including symmetry, identifying motions and determining congruency via motions. Within three to four days after completion of the motions unit, the author conducted thirty-six, 30 minute interviews with a subsample of the population (six boys and six girls from each of the three groups). The six-item interview was individually administered with students being asked to think out loud, explaining reasons for their responses whenever these were not clear. Responses were classified according to level descriptors (based on van Hiele) with disagreements discussed until consensus was reached. Finally, the motions post-test was re-administered as a retention measure to all groups one month later.

Thus student achievement was determined by assessing two dependent variables : (1) knowledge of motions geometry as defined by items correct on the motions post-test and retention test; and (2) level of thinking as determined by student responses on the interview items.

Results

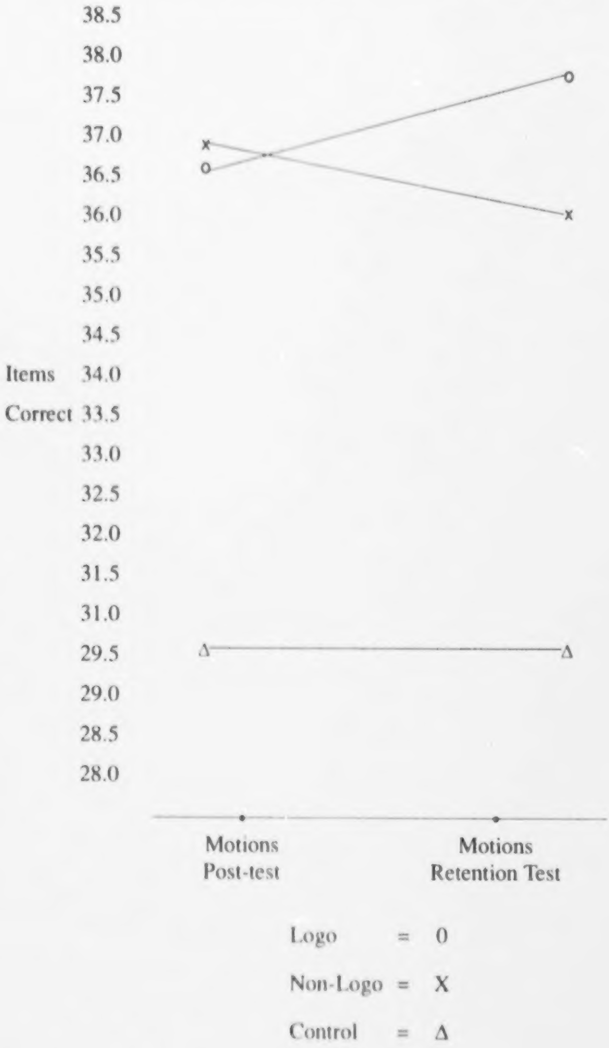
A modified presentation of the study's results will be presented here. (For an in-depth documentation see Johnson-Gentile, Clements, Battista, in preparation). As mentioned previously, the pre-test was administered to all subjects to ascertain whether the groups were equivalent before the treatment began. Pre-test data demonstrated both treatment and gender equivalency as neither main effects nor the interaction were statistically significant.

The motions post-test and retention test were scored with a number of correct items being the dependent measure (with a maximum possible score of 42). Group means and standard deviations were calculated. A 3 x 2 x 2 ANOVA revealed a significant treatment effect with the Logo and non-Logo groups superior to the non-treatment control group on both the post-test and the retention test. In regard to gender, results showed no significant difference between boys and girls, nor was there any interaction between treatment and gender.

The ANOVA also revealed no significant main effect for time, but a significant interaction between Treatment and Time with Logo scores proving superior over time as shown in Figure 2. (Again, for a detailed discussion of the treatment x time interaction see Johnson-Gentile, Clements, Battista, in preparation).

FIGURE 2

Items Correct on Motions Post-test and Retention Test



Interviews conducted with the 36 student subsample revealed that both treatment groups (Logo and non-Logo) performed at a higher level of geometric thinking then did the control group; Logo students performed at a higher level than the noncomputer students on four of the six interview tasks, noncomputer students performed at a higher level on one. (For a detailed description of interview data see Johnson-Gentile, Clements, Battista, in preparation).

Discussion

Regarding the specific hypotheses of this study, results revealed the treatment to be effective. Both treatment groups (Logo and non-Logo) proved superior to the control group on motions tests, as well as the interview dependent measure (level of thinking). There was no opportunity in this study to compare these treatment results with other curricula, so no conclusion can be drawn about the relative efficacy of these treatments. The main reason for this is that in the schools studied, motions geometry was not being taught, except of course, in the Logo and non-Logo treatment groups. Keeping that restriction on generalisability of results in mind, the study demonstrated the following:

1. that the level descriptors can be devised for "motions" applicable to fifth and sixth graders;

2. that curricula can be devised which help students advance at least to level 2 for motions;

3. that motions levels, as well as advancement through these levels, can be diagnosed and measured both qualitatively and quantitatively via test and interview items; and

4. that both Logo-based computer curricula, as well as more traditional curricular methods can facilitate both learning of motions concepts and student advancement through "motions" levels of thinking.

Finally, the significant treatment x time interaction suggested that the Logo-based programme may have a retention advantage over the non-computer curriculum. This finding needs to be replicated, however, to establish its reliability, as well as the reasons for its occurrence.

These findings appear most encouraging. Mathematics educators who are looking for innovative curricula and instructional techniques which may actualise the objectives set forth in the *Standards* may take heart for several reasons. First, progress is being made in finding reliable ways to measure levels of thinking. It is possible, for example, to categorise children's geometrical thinking into the various hierarchical levels of the van Hiele model. Second, it is possible to design theory-based approaches to facilitate students' cognitive growth (as measured by progress through successive levels of thinking).

Third, a variety of approaches to teaching geometric thinking seem promising, with computer-based approaches like the Clements/Battista Logo curriculum particularly promising and visually exciting.

Finally, it is perhaps most exciting to think that with the publicity of the *Standard*, development of new technologies, and serious work on curricula, instructional packages should continue to improve. The challenges are great, however. Teaching children so they move from van Hiele level 3 to level 5 may be more difficult than — or at least different from — helping them move from Level 0 to level 2. And educating teachers, particularly those who are unfamiliar with problem solving approaches and computer technologies, may require tremendous and continuing efforts in staff development.

There is, I believe, an ancient Chinese curse that goes something like, "May you live in interesting times." In regard to mathematics education, these are certainly interesting times to be living in. Perhaps the next generation of research and development will inform us as to whether it was curse or blessing.

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The Educational Studies Association of Ireland was set up in 1977 as a result of an initiative taken by a working party of Irish educationalists who believed that there was a need, within Ireland as a whole, for a formal association of Irish educators concerned with educational studies and research. It was hoped that such a body would provide a framework for all those with a research or scholarly interest in education and contribute to intercultural understanding within Ireland.

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GENDER ISSUES IN CLASSROOM DYNAMICS : THE NEED FOR RESEARCH AT SECOND LEVEL

Joan Hanafin

Until recently, there has been little published research on gender issues at second-level schooling in Ireland. Issues which have been addressed include gender differences in pupil participation in examination subjects (Hannan, Breen et al., 1983); the hidden curriculum (Lynch, 1989); the relationship between subject specialisation at second level and third level field of study (Clancy, 1989). However, a number of themes recur in the literature elsewhere, particularly in the area of gender — differentiated classroom processes and the hidden curriculum, which have not been addressed in this country. This paper aims to outline some of these findings and to suggest why so little similar research has been undertaken in Ireland.

Classroom Interaction

Teacher-pupil interaction

Gender-differentiated classroom interaction has been the focus of many small-scale, non-participant observational studies and there is almost universal agreement among researchers that boys are the focus of attention and activity in mixed-sex classrooms.[1] It has been suggested that teachers ask questions more often of boys than of girls, spend more time reinforcing or rewording questions for boys than for girls and ask more higher-order questions of boys than of girls.

Teachers are more likely to praise the academic content of boys' work and the presentation of girls' work and to criticise boys for presentation faults and girls for academic content. It has also been suggested that teachers give boys more feedback about their work than they give girls.

Pupil-teacher interaction

When pupil-initiated contacts were investigated, it was found that, in the mixed-sex classroom, boys initiate more pupil-teacher contacts, ask more questions, engage in more social interactions and conduct more class business than girls do.

Pupil-pupil interaction

Boys' behaviours in the classroom may serve to diminish girls' active classroom participation in the mixed-sex classroom. This may take the form of calling out answers to questions asked of the whole class, what Mahony (1985) calls monopoly of linguistic space. Mahony suggests that monopoly of classroom linguistic space may also be achieved by non-verbal means, i.e. by style and gesture. Mahony cites such actions as putting down pens, folding arms, leaning back in chairs, looking deliberately bored, groaning and sighing if a girl gives more than a monosyllabic answer.

Kelly (1987) supports this view, saying that there were many instances of boys using ridicule to silence girls : groaning when girls asked a question or calling the girls stupid. Kelly found no examples of this sort of comment directed at boys by girls. Her Majesty's Inspectorate at the Department of Education and Science (UK) found that boys may intimidate girls by mocking them for their perceived lack of expertise in science laboratories (HMI, 1980). They quote girls saying that "clever boys make us feel stupid" although they point out that these girls were, in fact, "able, two of the six aiming for medical school."[2]

Both HMI and Kelly felt that teachers' strategies for dealing with ridicule and verbal abuse were inadequate and that teachers generally failed to take a firm disciplinary line and support the female pupils. One reason put forward for this was the likelihood of boys becoming "fidgety" and disruptive if teachers gave girls a chance to speak.

Teacher Awareness of, Concern for and Expectations of Pupils

An Israeli study (Bentsvi-Mayer et al., 1987) asked a group of teachers and student teachers to nominate their most noticeable pupils regarding ability, achievement, behaviour and teachers' preoccupation with them.

Teachers perceived boys as being more prominent in almost all categories identified. More boys were nominated as being outstanding pupils in general and in mathematics in particular. More boys were nominated as possessing overall high potential. Boys caused the overwhelming majority of discipline problems. (The question of discipline is also raised in an overview of research carried out in American elementary schools. Lindow et al. [1985]

note that the research shows rather consistently that teachers give more attention to boys than to girls and that "much of the contact with boys tends to be negative; it is managerial and disciplinary in nature").[3]

More boys appear to occupy the minds of teachers after school hours. Girls were outstanding only in two categories : teachers were more likely to nominate girls as being outstanding in verbal/literary subjects and as being competent in social activities. They found no difference between teachers and student teachers in their responses. They also found that teachers of the youngest age-group already revealed highly significant gender differentiation in the way they perceive girls and boys as outstanding students.

In another study (Stanworth, 1981), teachers were asked about their expectations for their pupils' future educational and occupational status. Teachers' predictions of what female pupils might be doing five years from the time of the interviews did not match either the girls' academic standing or the girls' own aspirations. Intelligent girls performing well at school who were themselves ambitious about their future careers were not considered by their teachers to have a future outside of a traditional sex-stereotyped role.

Occupations seldom ranged beyond secretary, nurse or teacher; and marriage and parenthood figured prominently in teachers' visions of the futures of their female pupils. Boys, on the other hand, were seen in jobs involving considerable responsibility and authority, even those boys in danger of failing their examinations. Marriage was scarcely an issue at all in teachers' predictions for the future of their male pupils.

In the same study, teachers were found to be twice as likely to express concern for male pupils than female pupils and three times as likely to express an attachment to male pupils. When asked about concern for pupils who might fail their examinations, only boys were mentioned. This trend was much more pronounced among male teachers than it was among female teachers.

Pupils may also be aware of such gender-differentiated teacher behaviour. Both female and male pupils in Stanworth's study reported that, in class, boys receive more attention from teachers than do girls.

Teachers themselves, however, may not be aware of their gender-biased behaviour and attitudes where they exist. Morse and Handley (1985) report that teachers did not consciously seem to treat students differently nor were they willing to admit that they might be treating the pupils inequitably. Fennema and Peterson (1985) noted that teachers were very reluctant to look at their behaviour towards boys and girls as opposed to their behaviour towards individuals. Elsewhere, female teachers thought that they were either making no distinction between girls and boys or else that they were especially encouraging the girls (Crossman, 1987). Where teachers were given evidence of research, some were already aware of it and "took a fatalistic attitude to it, others disputed it hotly."[4]

Some researchers suggest that when teachers are aware of the likelihood of their devoting more time to male pupils than to female pupils, they either do not or cannot distribute their attention more equitably. Spender (1980) reports a failure to devote equal amounts of time to girls and boys in the classroom although consciously trying to do so. Again, boys becoming disruptive and discipline problems were cited as a factor. Sarah (1980) suggests that teachers may find that they spend a lot of time focusing on boys who are misbehaving while ignoring girls who are getting on with their work. Sarah also points out that constantly reprimanding boys for misbehaviour may serve to reinforce their assertiveness. Clarricoates (1980) reports that teachers allowed boys to engage in behaviour that was considered completely unacceptable for girls because it was seen to be aggressive and unfeminine and adds that girls, it seems, are being taught in school what is and is not appropriate and acceptable behaviour for them and this behaviour differs from what is taught to boys.

Teaching Style

Teaching style has also been given some attention as a means of inhibiting or damaging on the one hand, or encouraging on the other, successful learning and as an area where gender differentiation occurs. It has been suggested that different kinds of interaction teach different skills.

Reporting on the GIST project, Kelly noted that while the overall number of interactions in the project did not differ for girls and boys, the interactions were of a different nature. In the practical lesson, the teacher spent a lot more time helping the girls, appearing in some cases to set up the apparatus for them rather than letting them do it themselves. This was in sharp contrast to the question and answer part of the lesson where boys were far more likely to be chosen to answer a question than girls were. Kelly writes that "the distinct impression from this lesson was that the boys knew the answers and the girls couldn't do the practical."[5]

Fennema and Peterson (1985) examine how differential interaction affects girls' performance in mathematics. They contend that to develop the skills to perform well on tasks of high cognitive complexity, an individual must participate in autonomous learning behaviours which include choosing to do high-level tasks, working independently at them and persisting until such tasks are satisfactorily completed. Factors outside of school — at home, among peers, through the media — provide girls and boys with differential opportunities; but factors in school, such as the nature of the contact between the pupil and the classroom teacher, also affect chances for independent action. Some types of contact enhance autonomous behaviour, but females are not as likely as boys to have those contacts, they say.

Gender differentiation in pupil assessment

Research in the area of mathematics and science, particularly in the physical sciences, has been undertaken by many interested in gender issues because of widespread reportage of underachievement among girls in those areas, particularly in terms of participation.

Boys are reported by teachers to be more interested in, more likely to continue to study and better at science subjects. Research by Goddard-Spear (1987) indicates that teachers may be magnifying certain differences through gender-based assessment of their male and female pupils.

Goddard-Spear found that for identical written work, science teachers awarded higher marks to boys than to girls. Based on the same evidence science teachers formed higher expectations for boys than for girls. Work attributed to a boy received a higher rating for "richness of ideas" in all samples.

A "boy" author was also judged to display greater interest in science and greater suitability for 'O' level physical sciences. The variable "suitability" for 'O' level was included as a direct indicator of teacher expectation. This variable favoured boys on all comparisons.

In the majority of the samples a "boy" author received higher mean ratings for "scientific accuracy," "organisation of ideas" and "conciseness." The only work characteristic on which girls were favoured was "neatness." They received higher mean ratings for five of the six judgments of "neatness."

There was a clear tendency on the part of teachers to overrate the work of a boy compared to that of a girl, i.e. work attributed to a boy received a higher mean rating than the same work when attributed to a girl.

Implications

The net result of the issues outlined above remains unquantified. We can reasonably say, however, that relative to boys, girls are disadvantaged in the mixed-sex classroom in many ways. They may receive reduced teacher attention, be afraid to seek information and lack confidence, have fewer verbal roles open to them, have reduced access to equipment, be used as a negative reference group and be differentially assessed.

To enable us to make comparisons with the findings of other countries, similar research is a matter of urgency here and, if the findings outlined here are replicated, intervention programmes, including pre-service and in-service training which have been successfully used elsewhere, should be investigated and implemented.

Why no comparable research in Ireland?

Researchers of gender issues in education in other countries span a broad range of topics which include conceptualisation of gender and theories of gender difference, defining equality of opportunity, and the interface of class, race and gender as well as investigating the processes of teaching such as gender dynamics in classroom interaction and the hidden curriculum. Why, then, has there been such a dearth of research on gender and education in Ireland?

Firstly, there has been, until the last decade or so, a relative lack of research in education matters generally.[6] Kellaghan writes that "it is a measure of the quality and influence of thought on educational matters during the period that in the volume.......*Unequal Achievement : the Irish experience 1957-1982*, the subject of education did not merit a chapter."[7]

O'Sullivan (1989) examines the character of Irish educational ideas and finds Irish educational thought to be conceptually and analytically weak, paradigmatically insulated and ideologically domesticated. Secondly, gender inequality in society is largely invisible and when that factor is added to "impoverished educational thought"[8] it is hardly surprising that the result is a lack of research into gender issues in education.

Where discussion of gender issues in education has taken place, it has been in the context of equality of educational opportunity and unequal outcomes, an issue which came to prominence almost thirty years ago. O'Sullivan states that the Irish experience, in introducing educational innovations to promote equal opportunities, differed dramatically from the European experience where these innovations were accompanied by intense ideological debates.

Attitudes regarding appropriate gender roles and behaviours were so entrenched at the time these innovations were put in place, beginning with the late sixties, as to be invisible and they remained invisible for quite some time, a fact clearly illustrated by the discriminatory tripartite salary scales (women's, single men's, married men's) still in operation in the public service ten years after the equality debate had its first airing.

Although the legislative changes which have been brought about by our membership of the European Community and the setting up of the Employment Equality Agency have effected change for women, inequality remains. The workforce remains segregated horizontally and vertically.[9] Between 1974 and 1990, women's hourly industrial earnings rose only from 60 per cent to 68 per cent of the male earnings.[10] Women are scarcely represented at the policy-making levels of education, government, state-sponsored bodies, business, the media.[11] Adult gender roles remain clearly defined. O'Sullivan writes that —

> "attempts to eliminate sexual discrimination could be, and were, socially contained within existing structures, in a way that would have been impossible with many other forms of discrimination. Contrasted with the establishment of an equitable taxation system for farmers, the self-employed and the wealthy, for instance, sexual discrimination is a much safer, more manageable topic which can be and has, to date, been robbed of its ideological force in Irish society."[12]

This factor, he says, is illustrated by those who urge "changes in the subjects studied by girls as well as in their career orientations but pay scant attention to the broader question of the reward structures of occupations traditionally aspired to by girls."[13] The combination of these two factors, the lack of an ideational base and the invisibility of gender inequality in society, together go a long way towards explaining why gender issues in education have not been researched.

Turning to those who might do educational research — third-level educational institutions, research institutes, the Department of Education and teacher organisations — some reasons emerge in each area to explain why gender issues in schooling have been largely ignored.

The academic staff and postgraduate students of the education departments of universities, colleges of education and teacher-training colleges have not done as much research in this area as might be expected. Firstly, funds for carrying out research in education in Irish universities have been limited so that issues of low visibility and priority may not be considered. Secondly, female representation in the universities and designated colleges is less than 20% and women are concentrated in the lower academic grades.[14] Since it has been mostly women who have interested themselves in gender issues, there may not be sufficient women within the system to concentrate on gender themselves or to guide and advise student researchers. Thirdly, the absence, for the most part, of gender issues on the education courses of undergraduate students reduces the likelihood of postgraduate study in the area.

While the Department of Education has implemented action programmes (for example, the intervention projects in Physics and Chemistry) and has also matched EC funding (TENET, for example), generating research as an aid to policy making has not received a high priority. The policy-making role of the Department of Education varies considerably form time to time and the locus of policy decision-making may shift from politicians to civil servants at different times. Ministers may spend only a brief period in office and it would be impossible for one minister to see a complex issue through from start to finish.[15] Furthermore, in issues of policy, the Cabinet may be more influenced by the views of the Department of Finance than by those of the Department of Education.[16] This has been clear in recent times where the issues dominating second-level educational debate have been rationalisation, changes in the pupil-teacher ratio and redeployment, financial issues rather than educational ones. It is unlikely, therefore, that the Department of Education will spend much money on researching gender issues in education.

Some of the research referred to in the first part of this paper was carried out by Her Majesty's Inspectorate in the Department of Education and Science in England, where the inspectorates carry out independent research and publish findings which may or may not be in agreement with the views of the Department. This would be an impossible role for the Irish Inspectorates, not least because of the time taken up by their involvement in the public examination system.

The teacher unions and managerial organisations might be expected to interest themselves in the area of research. However, it is only in recent years that the teachers' unions have taken gender issues on board. The INTO has researched and the ASTI is currently researching gender and promotional structures. Less than a year ago, the ASTI made gender issues both within the union and in schools a part of its policy. The teacher unions now have equality officers and this awareness of gender issues will undoubtedly give rise to research and policy in the future.

Managerial organisations have only recently taken on board the issue of equality of educational opportunity and in the 1989 Budget submission of the CMRS, the two pages dealing with education while stating that "there are major inequalities in the Irish education system" did not mention at any point issues of gender.[17]

In summary, there are a number of themes in the literature on gender and education which suggest that gender differentiation occurs in classroom interaction and that the female pupils are disadvantaged by it and these issues have not been addressed by Irish researchers. This may be explained by firstly, the general paucity of research and lack of an "ideational base" as outlined by O'Sullivan; secondly, the invisibility of gender inequality in society and thirdly, the particular factors inhibiting those groups who might be expected to carry out such research. Finally, research on gender and education urgently needs to be carried out and, if the findings of research elsewhere are replicated, intervention programmes need to be put in place in order to eliminate gender as a legitimising category for inequality.

NOTES

1. See, for example, Clarricoates (1980), Crossman (1987), Delamont (1980), Department of Education and Science (1980), Kelly (1987), Lindow et al. (1985), Mahony (1983, 1985), Morse and Handley (1985), Randall (1987), Sarah (1980), Spender (1980), Stanworth (1981), Whyte (1984).

2. Department of Education and Science, 1980, p.18.

3. Lindow et al, 1985, p.3.

4. Kelly et al, 1987, p.102.

5. Kelly, 1987, p.75.

6. Kelleghan, 1989, p.208.

7. Ibid.

8. O'Sullivan, 1989, p.261.

9. Blackwell, J., 1986, 1989, *Women in the Labour Force*, Dublin : EEA/Resource and Environmental Policy Centre, U.C.D.

10. ICTU, 1980, Report of the Training and Equality Officer to Congress.

11. CSW, 1985, *Who Makes the Decisions?*, Dublin : CSW; Daly, M., 1987, Women, Power and Policy Making in Irish Society, paper presented to CSW Women in the Regions Conference, Limerick.

12. O'Sullivan, 1989, p.245.

13. O'Sullivan, 1989, p.263.

14. Smyth, 1985; HEA, 1987.

15. Harris, 1989.

16. Ibid.

17. CMRS, 1989, *Who Benefits? Who Pays?*, Dublin : Justice Commission, CMRS, p.37.

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HOW SHALL STAFF DEVELOPMENT PROGRAMMES BE EVALUATED?

J. Ronald Gentile

Introduction

Essential Elements of Instruction, Learning Styles, 4-Mat System, Cooperative Groups, Whole language, Mastery Learning, Critical Thinking, Lateral Thinking, Instrumental Enrichment, Philosophy in the Classroom, Synectics — these are some of the classroom ideas now being widely disseminated through staff development programmes throughout the U.S.A. Associated with each of them is some degree of entrepreneurship, from the marketing of books and curriculum materials to consultant services and lectures. Also associated with each of them, to greater or lesser degrees, is a research base purporting to show the classroom advantages of using the programme. Not surprisingly, the research on each system is by and large conducted by the programme's advocates (or their students) with little research, if any, by independent investigators or watchdog agencies.

Worse still is the fact that most of what passes for evaluative research on many of these topics is the "happiness quotient" — the self-report questionnaire given at the end of a short-term workshop. Loucks-Horsely et al. (1987) summarised the state of the field as follows:

> Most people agree that evaluation of professional development is necessary, yet there are few attempts to do more than measure "happiness coefficients" at completion of workshops. (p.155).

An independent observer, which I am trying to be, may find many of the ideas in these programmes quite exciting. At the same time, he or she is likely to be sceptical of the evidence, if not the whole research enterprise. Claims such as "x engages the right side of the brain as well as the left" or "y increases critical thinking" sound analogous to such advertisements as "Colgate is unsurpassed in reducing cavities" and "Guinness is good for you." The claims may all be true, but coming from researchers who have something to lose or gain from the evidence, it leaves one with a feeling that the fox is guarding the hen house.

Given the above state of affairs it is no wonder that we make little scientific progress understanding (1) what effects, if any, such programmes have and on whom, or (2) how degree or quality of implementation of such programmes is related to those effects. Programmes seem to be adopted or abandoned, not because of research evidence, but because we grow tired of them, or because a new idea comes along to capture our attention. Slavin (1989) put it this way:

> Educational innovation is famous for its cycle of early enthusiasm, widespread dissemination, subsequent disappointment, and eventual decline — the classic swing of the pendulum. (p.752).

If the disappointment and decline of an idea were accompanied by good evidence of its benefits and liabilities, such as drug research provides, then mounting those programmes may at least have taught us something important : we would be making generational progress.

If we are to stop the pendulum to make generational progress in staff development programmes, it seems necessary to adopt more rigorous evaluation designs. In this paper I advocate that staff development programmes — or perhaps any educational programmes — be evaluated according to a pre-planned, systematic, quasi-experimental design for data collection.[2] The data can (and perhaps should) be of a variety of types, ranging on the one hand from relatively objective measures of knowledge and skill in implementing programmes concepts to more subjective measures on the other hand, such as attitudes and other self-reports. While it matters what kinds of measures are taken, it matters even more what inference can be drawn from the measures taken. The design itself is a longitudinal time-lag plan for data collection which provides a variety of between-group comparisons (e.g. cross-sectional analyses of different cohort groups) and within-group comparisons (e.g. pre-test—post-test).[3] Most importantly, without such systematic designs it is impossible to infer the effects of the programme, no matter how good the purposes or measurements, because there is no way to exclude competing theories or alternative explanations for a result (e.g. Platt, 1964).

What is Required to Make Scientific Progress

The general answer to the question of how scientific progress is made is some variation of Francis Bacon's inductive method : successive exclusions or disproofs of alternative explanations for a phenomenon, which leads eventually to the truth. We need a systematic approach to this because, to paraphrase Bacon, truth is more likely to emerge from error than from confusion.

The scientific method evolved from such logic and consists, as Platt (1964, p.347) reminded us, of the following steps:

1. Devising alternative hypotheses.

2. Devising a crucial experiment (or several of them) with alternative possible outcomes, each of which will, as nearly as possible, exclude one or more of the hypotheses.

3. Carrying out the experiment so as to get a clean result.

4. Recycling the procedure, making subhypotheses or sequential hypotheses to refine the possibilities that remain; and so on.

For evaluations of drugs or other medical treatments, a number of standard, acceptable ways of conducting such experiments have been identified, including randomisation of people to active or placebo groups and double-blind procedures. For evaluations of many educational programmes, randomisation and double-blind procedures are difficult, if not impossible, and acceptable alternatives have not been widely used. But other fields, such as child development, have similar problems where, for example, children cannot be randomly assigned to different age cohorts, but must be accepted as they are. Researchers in such fields rely on the kind of designs I shall be proposing (e.g. Campbell and Stanley, 1963; Goulet, 1975). For staff development or other educational programme evaluations we need similar ways of collecting data.

To return to the logic of the scientific method, then, before we can infer that a programme is effective in some way, we must collect data in such a way that, at the minimum, we can reject the following alternative hypotheses:

1. that any change that occurred is explainable by maturation or experience during the interval in question;

2. that any change was due to experience with or practice on the test measures;

3. that any change was a result of other ancillary differences between groups, such as different amounts of attention (Hawthorne or

placebo effects), different student : teacher ratios, etc.

Such hypotheses can be rejected only if appropriate control groups are built into the experimental design.

For anyone who has taken a first-level science course, the above comments will seem obvious or elementary. A perusal of the literature on staff development programme evaluation will convince one, however, that many of us either forgot those principles or decided — incorrectly — that they do not apply to educational research. I say this because there seem to be four common beliefs or myths about evaluation research which maintain our poor record of scientific progress. Each of these will now be briefly described.

MYTH 1 : That surveys and other self-report data are good as more objective data

This shows up in the ubiquitous "happiness quotients" mentioned earlier, as well as in the uses of self-reports to assess what teachers learned from a staff development programme.[4] While it is expected that teachers will gain new knowledge from a programme, we are apparently reticent to give teachers a test of what they learned; rather we survey them to assess how they feel about what they learned. But if asking someone how well they think they learned the Pythagorean theorem were as good as testing them on it, we would assess our own students' knowledge by surveys instead of tests or practical exercises.

Another variation of this myth shows up in the inferences drawn from research. If self-reports have been used to assess how well teachers implemented cooperative learning, for example, then it is incorrect to draw the conclusion that cooperative learning was (or was not) related to student achievement. Rather, a weaker inference must be drawn — namely, that cooperative learning, as teachers perceived they implemented it, was (or was not) related to student achievement.[5]

MYTH 2 : That the design of an evaluation should depend on the audience

Research studies which take this as a guiding principle[6] leave us with the feeling expressed earlier that the fox is guarding the hen house. Drug research done for the drug company's stock holders or managers is, as it should be, suspect. Programme evaluations done for the teachers, developers, or any other interest group should likewise be suspect. We need research designs, measures, and procedures which are acceptable to the scientific community, and even then we need independent replications of the research (see also Slavin's [1989] recommendations in this regard). To avoid teachers or others from being threatened, it must be clear that we are evaluating the programme, not the individual participants. The latter should be anonymous in the design and all reports of the study.

MYTH 3 : That research designs should evolve with the programme or are not needed at all

Without an a priori design, however, we are at the mercy of the interest groups mentioned above. We are also prone to measure the most noticeable phenomena that occur (for example, noticing the most eager or disruptive students in class), and not likely to systematically establish the kinds of measures and controls needed to allow alternative hypotheses to be rejected (as described above).

It is sometimes suggested (e.g. Provus, 1969) that experimental designs for evaluations stifle the programme's continual development because they allow no changes to the programme or the measures once the evaluation begins. To the contrary, a sound longitudinal design not only accommodates changes, but allows those changes to be assessed (as the proposed design does).

MYTH 4 : That human behaviour is too complicated to be studied scientifically

Those who believe this can probably not be easily convinced otherwise, and I am probably not capable of doing so. If it were true, then brain and biochemical research would presumably be making little generational progress over the decades because they likewise deal with human behaviour, much of it more subtle and difficult to measure than the knowledges, abilities, feelings and beliefs with which educational researchers are concerned. But those fields are making progress in quantum leaps and I believe with Platt (1964) that the difference lies in research designs and measures which allow "strong inference" as described above.

Understanding the Recommended Programme Evaluation Designs

As noted earlier, the recommended design is one of a family of longitudinal and cross-sectional designs which have different groups entering the programme at different times. I shall use as an example a two-stage staff development programme, in which the first phase involves learning the basic concepts and methods of the programme and the second phase involves practice with peer-coaching (and/or clinical supervision) using these methods in actual classrooms.[7] I shall assume that each phase takes a year. In addition to simplifying the table, this is often the way staff development programmes are conducted in American schools.

For example, in one large urban district, initial training involved four 5-day sessions held at various times during the programme, each accommodating about 40 teachers. (Since trainers had to be paid and each of these teachers had to be replaced by a substitute teacher for five days, one can see the tremendous costs, both financial and psychological, involved in implementing this programme). The next year was the peer-coaching phase for those 160-some teachers, while introductory training sessions were conducted for teachers who had not participated the previous year.

If we assume that these teachers (and perhaps their students) are pre-tested before beginning the programme and post-tested, either soon after their exposure to each phase of the programme or at the end of the school year, then it is possible to set up a data collection schedule as shown in Table 1. While it is beyond the scope of this paper to discuss the measuring instruments, I wish to encourage the broadest possible interpretation, to include measures of cognitive knowledge, affect and opinion, classroom behaviour, and analysis of documents for both teachers and their students, as appropriate.

TABLE 1

The Data Collection Scheme for two cohorts of Teachers in a two-year Staff Development Programme

	Cohorts*	
Year of Tests	'91	'92
1990		
Pre-test	A	
Post-test	B	
1991		
Pre-test		A
Post-test	C	B
1992		
Pre-test		
Post-test	(C)	C

*NOTE: Cohorts are named by year of completion of the program, as in the standard practice of naming the class of '91.

In Table 1 the columns refer to the Cohorts of participating teachers, named by their scheduled year of completing the programme. The rows refer to times of testing. The letters in the body of the table for the '91 cohort, therefore, refer to the fact that that group of teachers received initial training in 1990 and were pre-tested and post-tested, perhaps in September and May, respectively. In 1991, the '92 cohort was pre- and post-tested, while the '91 cohort was post-tested again. In 1992, the '92 cohort was post-tested after completing phase 2. The parenthetical (C) indicates an optional follow-up test for cohort '91. The different letters refer to parallel forms of the test, if needed (e.g. for achievement tests, one would need different test items).

As described so far, the design is not sufficiently sophisticated to allow very many strong inferences. But I introduced Table 1 for didactic purposes only. The complete design is shown in Table 2, in which cohorts '91 and '92 are embedded in a larger scheme. The larger scheme takes account of the realism that few evaluations begin at the actual beginning of the programme. That is, there are often large numbers of staff who have received the initial training before the programme began (by going to professional meetings, by volunteering during planning stages, etc.). Some of them even become district trainers. These teachers constitute the cohorts I have labelled '89 (who completed both phases of the programme in '89) and '90 (who are in phase 2 of the programme when the formal beginning of the evaluation begins in 1990). If these groups are tested as noted, they add considerably to the power of the design. Similarly, the '93 and '94 cohorts, who come into the programme in succeeding years add both symmetry and power to the inferential effects of the design, as discussed below.

TABLE 2

A Three-year design for a two-year Staff Development Programme Evaluation

Year of Tests	Cohorts*					
	'89	'90	'91	'92	'93	'94
1989						
Post-test	A,C*					
1990						
Pre-test		A	A			
Post-test		C	B			
1991						
Pre-test				A		
Post-test			C	B		
1992						
Pre-test					A	
Post-test				C	C	
1993						
Pre-test						A,C**

NOTES: *Both Forms A and C are given at the same time after this Cohort has completed the program.

** Both Forms A and C are given at the same time prior to this Cohort beginning the program.

Inferring Effects from the Design

Analysis of Table 2 reveals that of the six cohorts, two each have had the following experiences during the course of the evaluation:

1. The full two years (Cohorts '91 and '92);
2. One year (Cohort '90 which was tested before and after its second year, and Cohort '93 which was tested before and after its initial year);

3. Zero years (Cohort '89 which was pre- and post-tested following exposure to the whole programme and Cohort '94 which was pre- and post-tested prior to exposure to the programme. Since these groups are both pre- and post-tested without any intervening treatment, they serve as controls on the relative difficulty of the tests and to see whether there are any practice effects of the tests. They also serve to provide estimates of the parallel-forms reliability of the tests and criterion-referenced validity (i.e. the latter cohort should score at chance level, while the former cohort should be at or approaching mastery).

Because of the existence of all these groups over the time periods noted, a number of useful comparisons can be made, among which are the following:

1. What is known or perceived by the participants (or observed by classroom observers) prior to the programme can be compared via pre-test scores for Cohorts '91 — '94. Assuming no changes have occurred in the population, then these scores should be approximately equal. Alternative hypotheses can be tested against this "null hypothesis", however, such as (a) the best teachers volunteered first (evidence for which would be decreasing pre-test scores from Cohorts '91 to '94), or (b) later participants learned the material through the grapevine (evidence for which would be increasing pre-test scores from Cohorts '91 to '94).

2. Professional development (of knowledge, attitude or behaviour) estimated longitudinally by comparing pre-test and post-test within, for example, Cohort '90 and then replicated on Cohort '91. If the major effect of the programme seems to occur in the second year, then those effects can be tested further cross-sectionally by looking at the amount of growth during the second year for Cohorts '90, '91, and '92 and comparing it to amount of growth during the first year for Cohorts '91, '92, and '93.

3. Degree of professional growth (in knowledge, attitude or behaviour) as described in #2 can also be estimated by comparing cohorts '89 and '94. The difference between them should be expected to be the same as the post-test minus pre-test scores within cohorts '91 and '92.

4. Effects of systematic changes in the programme can be assessed by certain before-and-after comparisons. If, for instance, initial

training was conducted by nationally known programme experts through 1990 but subsequently conducted by district trainers, then pre- and post-test scores for cohorts '90 and '91 (first year) can be compared with equivalent scores for cohorts '91 (second year) through '93. Other hypotheses about programme changes can similarly be addressed.

5. Additional comparisons not directly addressed in the design can easily be added. For example, follow-up measures of maintenance of skills can be scheduled for all groups in 1993, similar to the optional test described in Table 1. Where possible, a "no treatment" control group could be added. For example, teachers could be trained, say, in 1990 as Cohort '91, while others could be pre- and post-tested during 1990 but not begin training until 1991 (as Cohort '92).

Discussion

To bring this paper to a close, let me return finally to Platt's (1964) paper on strong inference — namely, what he calls "The Question." The idea is that when any explanation for a phenomenon is advanced — either by self or someone else — we should ask either of the following forms of "The Question:"

1. What hypothesis does the experiment disprove?

2. What experiment could disprove the hypothesis?

If we and other researchers cannot answer those questions or wish to dismiss them as irrelevant, then we may have been busy (playing politics, selling products, or publishing instead of perishing), but we are not advancing scientific understanding of the programme being evaluated.

The conclusion, I suppose, is somewhat harsh, but inescapably simple. educational evaluations in general, and staff development programme evaluations in particular, have often been conducted by unscientific studies which are not adequate to allow the kinds of inferences that we routinely wish to draw from them. We avoid the more rigorous longitudinal and comprehensive designs as too expensive and time-consuming. But if decades go by without generational progress being made, which approach is the more expensive and time-consuming?

NOTES

1. Appreciation is expressed to Drs. Kay Johnson-Gentile and Hugh Gash for their constructive comments. This paper was written while the author was a scholar in residence at St. Patrick's College of Education, Drumcondra, Dublin.

2. Marshall (1988) has described five purposes for staff development evaluations, most of which do not require rigorous research designs. However, to make the kind of generational progress with which I am concerned in this paper — a scientific purpose that is partially reflected in only one or two of Marshall's purposes — research design issues are crucial.

3. This design is based on one first presented by the author in 1977.

4. For example, Loucks-Horsely et al. (1987) describe self-reports as equivalent to more objective measures of teacher knowledge.

5. Slavin (1989) made this kind of error of inference in discussing evidence on Hunter's Essential Elements of Instruction.

6. This belief is raised almost to the status of a principle of evaluation research in Loucks-Horsely et al. (1987).

7. For a three-stage, four-year programme evaluation design see Gentile (1977; in preparation).

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ASPECTS OF PLAY IN THE JUNIOR INFANT CLASSROOM

Mary Anne Horgan

> *Play is not the mere passing of time. Play is Life.* (International Playground Association's Malta Declaration of the Child's Right to Play, 1977).

Introduction

I undertook this study in order to investigate the extent to which the recommendations of the present Primary School Curriculum regarding the importance of play-oriented activities at the Junior Infant Class level, are being implemented. This Curriculum, formally introduced into all Primary Schools in 1971, emphasises the critical importance of experiential learning in the child's cognitive, linguistic, social, creative and physical development. Seen as the latest edition of the educational pharmacopoeia, it was believed that its implementation would result in the palliation, if not the cure, of all the maladies which had afflicted Irish education prior to then. In my study, a review of the historical theories and definitions of play in education served to clarify and conceptualise some present-day understandings of the term, while an analysis of the research in this field gave empirical validation to many of these theories. This paper outlines my research in the cognitive, linguistic and social domains, and gives a synoptic overview of the main findings.

The ethnographic research strategy which I used was found to be the most suitable method of assessing empirically the degree to which play was present in the classrooms. Consistent with the ethnographic approach which strives to provide a multi-dimensional account of the dynamic within each classroom, this study was eclectic in nature, encompassing a target child observational schedule, interviews, an interaction analysis system (Brown, 1975) and a study of classroom timetables, layout and equipment.

The Target Child Study approach (Sylva, *et al,* 1980) is based on the "focal animal technique" which was developed by ethnologists. This method, was designed to catalogue the behaviour of individual animals (e.g. chimpanzees) through many different routine settings in their natural habitat. Having compiled these individual profiles, a composite picture of the typical behavioural patterns of the subjects is obtained. Transferred therefore to a school setting, this technique allows the observer to record a wealth of information regarding children in their natural school environment. The observation schedule used in the above study had been implemented in Oxford (England) and was duplicated in Miami (Florida) with great success. The original 30 activity code categories had been extended to 42, (Jowett, 1981) to encompass all possible types of behaviour in the Reception Class.

Since the use of the Target Child Study approach effectively channelled my attention into the detailed analysis of one child's behaviour at any one time, analysis of actual lesson content or structure was impossible. It was, therefore, decided to conduct a twenty-minute interaction analysis study of each classroom. Hence the verbal interaction patterns of teachers and pupils were studied using the seven categories of Brown's (1975) Interaction Analysis System. These aspects of the study were conducted in Cork City and County during the first term of the 1985-86 school year. In this period, the behaviour of 150 children in fifteen junior infant classes was recorded during 50 hours of observation. These schools were selected using a stratified random sampling technique. Ten children in an Irish-speaking school *(Gaelscoil)* were also observed and the observations were presented as a separate Case Study.

The results of the observational study were placed in a national context with the aid of attitudinal and factual information. This information was obtained from a questionnaire which was circulated nationally to a randomly selected group of 75 junior infant class teachers. There was a 76 per cent response to this questionnaire. It was possible to compare and contrast teachers' attitudes expressed in this questionnaire with the findings of the Target Child Study since both studies had been conducted simultaneously.

Play and Cognitive Development : Analysis of Findings

In recent years, the importance of play in the child's cognitive development has been addressed by many. The most influential have been Piaget (1962b), Brüner *et al* (1976), and Sutton-Smith (1979). Piaget contended that the young child develops his mental structures *(schemata)* through activity and exploration of his environment. Similarly Sutton-Smith and Brüner emphasised how manipulative play "opened up thought" by enabling the child to focus on means rather than on ends. Each argues that the child cannot move towards abstract structure and reasoning without a broad base of direct sensory, dramatic and manipulative experience from which he can generalise and extrapolate.

In this study the intellectual faculties of the child were isolated as a starting point for investigation. This choice was made because psychologists (for instance, Piaget, 1962b, and Brüner, 1976) and practitioners, including the advocates of the 1971 curriculum (1971, pp.18-19) concur that a child passes through sequential and identifiable stages of intellectual development.

Intellectual ability (also called cognitive complexity) was evaluated on the basis of the level of concentration which the child displayed when engaged in various tasks. Two qualities characterise concentration: one is the ability to sustain attention and the other the capacity for commitment to one's actions. Therefore, the first clearly defined research goal of this study concerned itself with factors in the junior infant classes which encourage or impair concentration in young children. While the children's concentration during formal tests of skill was the initial focus of inquiry, their attention during more relaxed activities, such as storytelling and free play, was also observed. These points of interest raised the following research questions:

— To what extent do children in junior infant classes engage in activities which require complex thought?

— What factors encourage or hinder it?

— What amount of time do they spend on

(a) Formal play activities?
(b) Free play activities?
(c) Empty (waiting/watching) activities?

— What factors appear to encourage or hinder the children in attempting the above?

The table below is a simplified version of the main findings regarding the activities of the children observed and the cognitive challenge contained therein.

TABLE 1

Summary of the Main Findings Regarding the Behaviour of the Target Children and its Cognitive Challenge
(Time percentages were calculated from
the 6,000 Half-minute units of observed behaviour)

Category	% of Total Time Observed
Challenging 3Rs Activity	9%
"Playful" Activities that challenged the Child	8%
"Playful" Activities that did not challenge the Child	13%
Activities that contained no visible challenge	70%

On average, the children observed spent 17 per cent of their time engaged in activities which were cognitively stimulating : just over half of this contained formal educational activities, while the remaining portion contained free play activities which were challenging. Children were occupied for a further 13 percent of the total time observed with free play activities which did not challenge them. Seventy per cent of school time was devoted to empty, waiting or watching activities.

In the course of this study certain factors revealed themselves as obstacles to the cognitive development of junior infant class children through play. These included the teacher's attitude to play, pupil-teacher ratio, and availability of equipment. However, when other factors were held constant, the teacher's attitude was found to be the factor most highly correlated with the provision of play experiences. results obtained from the classroom study showed that a low level of cognitively challenging play was found in classrooms where the teacher followed an inflexible timetable and taught the class as a whole. Furthermore, the questionnaire results indicated that class instruction was the most frequently used (78 per cent) instructional method. while most teachers (94 per cent) agreed in theory with the importance of play and the manipulation of concrete objects in the enhancement of cognitive development, the majority of participants revealed that in practice they followed a reverse of this order.

In contrast, a flexible timetable and teacher awareness of the importance of dramatic and manipulative play, usually resulted in an environment where cognitive challenge was high. It was found that children's highest levels of cognitively challenging play accompanied structured Three Rs activities, art, pretend play and play with structured materials.

Waiting, watching or group repetition cannot be said to stimulate the child. Even if one were to concede that such behaviour contained some level of cognitive stimulation, it could hardly be equated with the high challenge and rich stimulation which many influential researchers and educationists, including Piaget, (1962b), Brüner (1976), and Johnson (1980) *et al,* have seen to accrue from direct sensory experience by the child. Despite the fact that the children had still not completed their first term in the formal school system, the majority of activities which they undertook presupposed Brüner's second and third stages of cognitive development, i.e. iconic and symbolic coding. Although Piaget and Brüner and many others agree that manipulative experience is a prerequisite to understanding abstract concepts, this order of presentation was not adhered to in the majority of classrooms visited.

Play and Linguistic Development : Analysis of Findings

Every school programme has as one of its priorities the fostering of language. Modern research has highlighted the importance of play with language for young children.

Elkonin (1971), for example, stated that just as the mastery of objective reality requires the establishment of a connection between activity and objects, so also is activity with language necessary for its mastery. Vygotsky (1962), Luria (1963), and Yudovich (1971) *et al* have contended that words not only express thought but are also of seminal importance for its formation. The child's play with sounds and word patterns has been said to develop his metalinguistic awareness (Cazden, 1976) which in turn has been isolated as one of the most essential preconditions for future literacy.

The Primary School Curriculum (1971) recognises language not merely as a specific area of knowledge, but also as a medium through which all knowledge and experiences are organised and made meaningful (Teacher's Handbook, Part I, p.19). "Language is the basis of conceptual thought" (Ibid p.128). Primary Teachers are thus exhorted to —

> "provide ample opportunities and incentives for every child to use speech and thereby to develop the ability to express ideas clearly, fluently and articulately" (Primary School Curriculum, 1971, Part I, p.83).

My analysis focused on several measures of verbalisation in the junior infant class. One notable exception was the area of repetitive oral group work (for example, group answering or recitation). This was not considered to be an adequate measure of the linguistic competence outlined above. The following questions were addressed:

— How much do the children talk?

— What is the linguistic level at which they communicate with other pupils, teachers or themselves?

— How many conversations do they have about any topic?

— Which settings (social and activity) promote most conversations?

— Do junior infant classes foster conversational skills?

— What factors appear to influence development in this area?

This analysis of talk in Junior infant classes was based on the hand-recorded notes which were taken simultaneously with observations, and also on the results of the Interaction Analysis Schedule which was completed in each classroom during a randomly-selected twenty-minute period. (Activities whose inherent nature would limit language utterances — e.g. periods of writing — were excluded). Although its limitations must be acknowledged, the findings in this section, nevertheless, present an interesting picture of the frequency and nature of speech in the junior infant classes observed.

The main finding to emerge was the very small percentage of time during which the children actually spoke. In all this was less than 15 per cent of all the time observed. Of this, a total of 12.6 per cent of all the half-minutes recorded contained language utterances by individual target children. Almost half of these were addressed to other children and a quarter were utterances to the teacher. The remaining quarter of this time was divided between responses to the teacher's questions and ego-centric/self speech.

Dialogue (i.e. a three or more turn sequence which had a minimal structure equal to A—> B; B—>A; A—>B) was entertained during a trifling 1.83 per cent of the total 6,000 half-minute time units studied. This becomes even more meagre when one realises that it includes both teacher and child-initiated sequences. Although there were slightly more conversations in the multi-class settings the 94 per cent of time which was devoid of dialogue in these classrooms is still a surprisingly high proportion.

However, one cannot conclude that these classes were the embodiment of the silent unquestioned assimilation of knowledge. This is only partly true : adult-imparted information was accepted without question, but silence did not always prevail. During adult-led group activities, for example, when engaged in rhymes, songs, and many other passive classes, the children were actually speaking, although usually in groups or with the whole class. Moreover, the content of these periods of spoken language was always determined by the adult.

An analysis of the findings of Brown's Interaction Analysis System (see Table 11 below) further elucidates some causal factors.

TABLE 11

Interesting Facts Concerning Language in the Classroom
(From Brown's Interaction Analysis System)

Category	Approximate % of Total Time Observed
Teacher speaks	56%
Silence reigns	19%
Pupils respond	15%
Pupils volunteer	7%

In the first instance, teachers spoke for over half of the time (56 per cent). Silence was enforced for a further 19 per cent which implied that total pupil talk was 22 per cent. Unfortunately, over two-thirds of this was devoted to group repetition and response, allowing just 7 per cent of time for voluntary utterances on the child's part.

An increased incidence of pupil talk in the multi-classes visited and also in the *Gaelscoil*, where the children were faced with the additional obstacle of a second language, points to a link between pupil-teacher ratio and language frequency. In these settings the ratios averaged 18:1 in comparison with 30:1 in the other single classes observed. However, another extremely important variable merits inclusion : that of pedagogic style. One of the 15 schools exemplified a situation where children in a cramped environment with a pupil-teacher ratio of 36:1 spoke for over 56 per cent of the time. Here they were encouraged to play with sounds and words and very evidently enjoyed themselves.

Play and Social Development : Analysis of Findings

During any school day a variety of different activities will be undertaken. These in turn demand different types of social grouping. The 1971 Curriculum identifies three kinds — individual, group, or class activity. It states that —

> The basic skills are acquired not so much through class teaching as through individual and group activity, each child progressing at his own natural rate, each at the different stages of his advancement being allowed full scope to express his own personality and experience the joy of discovery. (Primary School Curriculum, 1971, Part 1, p.16).

Since much playful and co-operative behaviour occurs in the security of individual, pair or small group settings, an analysis of the amount of time children spent in these situations was included.

Recent empirical work has investigated the cognitive content of play in various settings (Moore, Everston and Brophy, 1974; Rubin *et al*, 1976, 1978). Such research has isolated the solitary and/or small group play of three to six year olds as being the most cognitively challenging, whereas parallel play situations (i.e. where a child plays beside others without interacting with them) are now viewed as indicative of both social and cognitive immaturity (Smith, 1978, *et al*). In the light of findings such as these, the child's social participation was viewed in terms of its ability to induce cognitively complex thought.

The resultant research questions in this area were as follows:

- What is the child's level of social participation?
- To what extent and in what way does the child interact with the teacher and other children in the class?
- Are there any significant differences in the social skills which they are using?

- — What factors appear to influence social interaction?
- — Which social setting accompanies the most cognitively sophisticated behaviour?

The results yielded by the Target Child Study Schedule used in my research showed that the children did not really interact with each other. In many instances the modern furniture was arranged in traditional rows which limited each child to two language partners. Indeed, in most of the fifteen centres visited, prescribed "educational" tasks and teacher-directed activities necessitated a severity of disciplining which precluded movement, chatting or giggling. Much activity was thus conducted with the class quietly sitting in elbow-to-elbow type formation. There was virtually no freedom of movement on the part of the child. Undoubtedly, this rigidity of both discipline and seating had repercussions in terms of the opportunities which were offered for social development.

Questionnaire respondents indicated that 70 per cent of their classrooms contained modern furniture, yet 46 per cent of this remained stationary.

TABLE 111

Summary of the Main Findings regarding the Social Activity Patterns of the Target Children.
(Time percentages were calculated from
the 6,000 half-minute units of observed behaviour)

Category	Rough % of Time Observed
Sitting passively side-by-side in large groups	47%
Sitting side-by-side in large groups while interacting	16%
Sitting passively side-by-side in small groups (≤ 6 children)	15%
Sitting side-by-side in small groups while interacting (≤ 6 children)	2%
Interaction with one other child	15%
Alone	5%

The above table shows that the most commonly observed social setting in the 15 schools was the large group. This, by its very nature, limited social interaction and was often accompanied by teacher-led classes which demanded a passive acquiescent type of behaviour from the child. Even within this setting children still managed to talk occasionally, with varying degrees of teacher tolerance. Although the small group interaction setting was observed in a mere 2.35 per cent of all instances, it accompanied the most cognitively stimulating play activity. Moreover, this is consistent with the research findings mentioned above which indicate that notwithstanding solitary play behaviour, children's most stimulating play activity occurs in small groups.

Conclusion

The use of the Target Child Study Schedule and of the questionnaire survey encompassed both single class and multi-class settings. Consequently it was possible to compare the physical characteristics of the schools and attitudes of teachers therein. The questions posed examined differences in structure between single grade and multi-grade classrooms; the extent to which the availability of equipment is determined by the location and size of the school; the problems experienced by teachers in various settings; the relationship between environmental constraints and classroom atmosphere; and the different attitudes to play and experiential learning held by teachers.

Two main categories of problems emerged from the results. One was experienced by teachers of multi-classes and the other by teachers of single class groups. Teachers of multi-classes stressed the need to improve their physical environs and to provide a greater amount of manipulative material and structural apparatus. Teachers of single classes underlined the need to reduce the pupil-teacher ratio, to provide inservice courses, especially for young teachers, to prolong the junior infant cycle and to provide every school with duplicating facilities. However, classroom observations revealed that experiential learning is not necessarily a corollary of modern well-equipped classrooms. Neither does a high pupil-teacher ratio and a lack of equipment preclude the possibility of cognitively challenging and linguistically rich play activities.

The final question posed above places the other research questions in their proper perspective. As every teacher is individualistic and idiosyncratic, so also is each teaching situation. This individuality manifests itself in teachers' attitudes towards play. In this study, it was found that the few teachers who were positively disposed to play, believing in its unique potential as a learning medium, succeeded in overcoming many of the obstacles which were the stumbling blocks of several of their colleagues.

Nevertheless, these obstacles exist. It is interesting to note that approximately 70 per cent of teachers are assigned to an infant class in their first year of teaching (I.N.T.O. 1984, p.15; I.N.T.O. 1986, p.5), although the majority would prefer a more senior class. One could infer from this and from the fact that more senior staff members are rarely found teaching at this level, that junior infant classes are perceived as being less desirable than the higher classes. This bias is also evident in the present points system. Such a discrimination against teachers of younger children needs to be investigated.

I found that the reluctance to teach infant classes was rooted in the unrealistic pupil-teacher ratio which exists at this level; in the perception of the curriculum as being impractical; and in the classroom constraints and lack of resources. Therefore, it is clear that both environmental restrictions and negative attitudes of teachers, which are influenced to a certain degree by these obstacles, militate against effective implementation of a heuristic approach to education.

Redressing this imbalance necessitates the implementation of a two-tiered plan. Firstly in order to enhance the status of infant teaching and to give direction in the practical implementation of an experiential approach to learning, an optional two-year diploma course in infant education should be provided for student teachers in all the Colleges of Education. Inspiration could be drawn from the Belgian *Werkplan voor aproedence activiteiten in de Kleuter school* (A programme for activity-based learning in the Kleuter school), Douglas, 1984, p.5). Furthermore, a sustained systematic series of inservice courses for trained teachers and a specialist inspectorate should be provided. Ultimately, this would result in the formulation of a specialised body of infant class teachers.

Furthermore, if implemented, the following suggestions, many of which have been proposed by educationalists, notably Hurley (1982), and which have been recently endorsed by the Irish National Teachers' Organisation (I.N.T.O. 1987), would help ameliorate the environmental problems. In terms of class size, the pupil-teacher ratio at the junior infant level should not exceed 20 : 1. If the appointment of additional teachers is not feasible, trained ancillary personnel with specific functions should be available to all junior infant teachers. The extension of the present infant cycle to three years would also facilitate the implementation of activity-based learning experiences. Moreover, a heuristic approach demands adequate classroom resources and facilities. Every infant classroom requires movable furniture; sand and water play areas; display and storage facilities; and durable working surfaces. Finally junior infant teachers should receive a special annual allowance for the purchase of equipment.

The evidence recorded in this study indicates that junior infant class children in Irish Primary Schools need, and can benefit from such special provision as has been outlined above.

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GIRLS AND SCIENCE : EQUALITY IN SCHOOL OR SOCIETY?

(A Case for Macro and Micro Analysis)

Neil Ó Conaill

In the last decade the question of girls' involvement in Science subjects has been of concern to educationalists. For the majority it is seen as a problematic area, one of underachievement and under-representation. Like many portmanteau phrases "girls and science" is misleading. Used almost exclusively in a negative sense it implies that girls in science are dogged by underachievement and stricken by inadequate resources.

In this paper I attempt to consider strategies devised to encourage greater participation by girls in science subjects in the context of power relations governing education and the sexual division of labour in society. It is my contention that intervention strategies and our interpretation of the reality indicate an underestimation of these two factors. While arguing for the adoption of this macro perspective I also highlight the need to engage in detailed empirical research to establish how the mechanisms of discrimination in the hidden and open curricula operate to dissuade girls from choosing science subjects.

Power and change are fundamental concepts in the evolution of the educational system. No single group wields sufficient power to institute educational change which restructures its form and provision. In education power is constituted by the interaction of social, economic and bureaucratic dynamics. It is not the property of any one group but numerous groups that harness education to legitimate their status. Foucault (1977) advances the theory of power as a series of relationships within society.

> Power is conceived not as a property but as a strategy, its effect of domination are attributed not to appropriation but to dispositions, manoeuvres, tactics, techniques ..... one should decipher it in a network of relations, constantly in activity, rather than a privilege one might possess.

In education power is crucial in determining the definition of knowledge, its accessibility to different groups and the relationships between accepted areas of knowledge.

A matrix of social and political tensions constitute the power relations from which an educational ideology emerges. An ideology is required by the dominant groups to legitimise their purpose.

It is through the use of ideology that elite groups enlist the co-operation of the state so that the educational system propagates their ideals. Althusser (1971) argues that the ideological state apparatuses (ISA) by which we mean state bureaucracies, for example the educational system and the judiciary, "function by ideology;" ideology as used in this sense does not mean ideas but an ordering of things, codes of behaviour through which individuals conduct their lives. Individuals, the "subjects" are not so much exposed to these ideologies in terms of "ideas," but rather their lifestyles are shaped by these ideological state apparatuses to such an extent that they contribute to the reproduction of capitalism. Women's domestic labour and their use as a reserve army of labour should be seen in this light: patriarchal and capitalist relations maintain women in these social relations for the continued sexual division of labour.

The network of relations governing education contribute to gender inequality within schooling and the sexual division of labour. Economic growth is conceptualised in terms of familiarity with technology and consequently the educational system is structured to provide the manpower, skilled and flexible for this growth. One asks if recent emphasis on industrial relevance in school curricula will reinforce the position of the majority of girls in an unequal and sexually divided labour market.

Just as one cannot identify definitely a state ideology for the education of women, mostly because it is created from relations which are in constant flux, the category "women" is extremely broad when discussing roles in society and treatment by state institutions. It embodies what Henriques (1984) calls a "multiplicity of subjectives" mothers, wives, workers, students, consumers ..... In discussing the social relations of women Henrique advises that our approach cannot speak of a specific subject behaviour and attitudes or ascribe in advance the subjects' position according to class or to gender. The different positions adopted by women, the subjects, in social relations and the different power relations influencing their actions emphasise the importance of confining analysis of "women in society" to a specific group for whom valid reference points can be constructed. Within education specific reference points are required when talking about girls' education. The educational system is not a uniform ISA regarding women. Class, regional differences, as well as gender are variables affecting women's experience in the educational state apparatus.

Greater participation by women in all levels of education, a higher proportion of women in the workforce, demographic decline exacerbating the skills shortages, the changing needs of industry and the increasing mobility of the workforce all contribute to the flux which is termed women's position in society. It is necessary to look at women's education in this macro perspective because it is these structures which shape the experiences of individuals. Strategies tackling gender inequality within schools should take cognisance of the purposes envisaged for the educational system by the social groups which constitute the power relations. Unless inequality is perceived and challenged at this level, practice may be altered but the outcome will be characterised by a persistence of inequality.

The school functions at an important ideological level by passing on gender relations appropriate for the capitalist economy. The hegemonic regulation of social relations through schooling imposes a concept of femininity which stresses women's domestic role and allows only secondary involvement in the labour market. The school is a vital institution for the maintenance in the long run of the segregated workforce and social relations of production which it does through the transmission of a set of gender relations. It is important to expose how this is done not alone at the level of material skills but also at the level of consciousness and ethos. Remedying obviously sexist practice is straight forward but the use of non-sexist materials may not have long term impact on attitudes. Women's educational experience is shaped by the state ideology as created by patriarchal relations and the needs of industry. Consequently official ideology must be examined as both causes and a reflection of women's economic dependence on men and the continuance of social class and gender inequalities in society. The ideological climate of patriarchy creates an educational system which consolidates socially defined gender roles. When "preparation for working life" is mentioned as an educational aim, the working life envisaged for girls is not the same as that for boys. The state ideology for the education of women was shaped on the context of utilisation of female labour both at home and in paid labour. With inadequate child care facilities and domestic duties primarily women's responsibility, shift work and part-time work are seen as popular options for women. These options tend to marginalise women as paid workers and consolidates their responsibility for domestic labour which is further downgraded in the process.

If we accept that the educational system, working through a patriarchal ideology and capitalist economy, functions to maintain the sexual division of labour, how does this work at the level of pedagogy? How do patriarchal inequalities manifest themselves in curricular practice? Is it not just a matter of identifying malpractices in the overt and covert curriculum and remedying them?

Clearly the hidden and open curricula need to be reviewed in this regard. The exposure of sexist practice in the overt curriculum is straightforward but this is much more complex in the hidden curriculum which ordains as natural or common place an unequal system. However, the matter does not end with hidden processes and open practice. Also to be examined are the theories and practices and teachers' judgements on which pupils' performance is produced, monitored, evaluated and regulated.

The operation of ideology, power relations and even pedagogy is not a straightforward regular area. It is the precise alignment of power and pedagogy, the educational system operating to maintain the status quo of present power relations, which ensures that tampering with pedagogic practice will have little impact in changing overall inequalities.

Gender as an Issue in Science Education

On-going research in the area of gender bias in science education provides a pertinent link between the sexual division of labour and pedagogic inequalities. There has been a recurrent tendency on the part of state officials, if not educationalists, to associate national regeneration and self-advancement with women participation in vital technical and vocational areas. For example, the Department of Education Intervention Project Report (1988) suggests that

> labour market changes resulting from social and technological changes mean poorer employment prospects for young women whose educational experience fails to equip them with the skills in demand in the changed work context.

Clearly any effort to overcome the subject barrier and the introduction of pupils to areas of knowledge from which they were previously excluded should be welcomed. Such initiatives should be supported in the context of promoting equality between men and women in society, and this requires institutional and curricular change.

I will briefly outline what is seen as the "problem" of girls and science, before elaborating on strategies adopted to counter these "problems."

Gender as an aspect of science education emerged as a major area of research in the 1970s. Its emergence with the Great Debate (as initiated by Callaghan at Ruskin College) was indeed no coincidence. The language of the Great Debate was one of wastage, efficiency, talent, utilisation of resources etc. A research topic which originates in this climate should be viewed in the social and political context of this greater educational debate. This is most important for the topic of gender issues in science. As Outram (1987) has urged,

> only by producing an accurate history of women in science, can the relationship between the feminine and science in the classroom escape from its predominantly negative characterisation in the educational literature.

The analysis has very slowly progressed from its Great Debate reasonings. It was concerned with the success and failure of female pupils; why weren't they as good as boys? The Debate expressed concern about the number of girls and women entering high level careers requiring maths and science; such careers require senior cycle courses and usually a university degree. We are talking then about a very specific and extremely small proportion of girls.

As already mentioned,to consider "girls" as a unitary category in education is misleading; to consider their performance as "versus boys" is further misleading. They are not a unitary category — there are class and regional variations in performance; nor is "science" a sufficiently specific topic on which to theorise about "girls" ability.

The assessment of pupils' performance in any area is very complex and the political consequences of such statements are profound. As Walkerdine (1989) points out, research on sex and gender overwhelmingly uses methods which search for differences,

> usually differences which can be quantified, rectified by the use of statistical techniques. Similarities are treated in terms of their failure to show significant differences; in other words, similarities become non-results.

This approach, which seeks statistically significant differences rather than educationally relevant differences, allied with the emergence of the research topic as a Great Debate theme, has clouded the issue of girls and science. Science is a problem area regarding girls, not because they are failing at science, but because there are organisational and pedagogical factors militating against greater participation in science subjects. At an organisational level factors such as timetabling, options, single or mixed classes are of special relevance to science subjects. At the level of pedagogy, issues like the mathematical nature of science course, textbook bias and interaction are significant.

So let us assess the problem in organisational terms. Sex differences in participation rates in school subjects must be set in an overall context of inequalities between men and women in education and the workplace. Otherwise their significance may be underestimated. In Ireland girls' participation rates in the senior cycle are higher than that of boys. Although greater numbers of females do the Leaving Certificate, subsequently fewer girls than boys go on to third level and of those who do fewer enter applied professional/technical scientific courses in Universities or RTCs (National Manpower Service 1981). Even with the same Maths and Science qualifications girls are far less likely than boys to take applied science or engineering courses in Universities or RTCs. Hannan et al. (1983) conclude that sex-differentiated values and expectations even extend to such third level choices.

However, more boys than girls have the opportunity to study the sciences at senior cycle. Provision is an important factor in the Irish context where variables such as type of school (vocational, secondary, comprehensive, community) and whether it is mixed or single sex are considerable factors in deciding whether or not particular subjects are taught. Hannan et al conclude that boys are better provided for in higher maths, physics, chemistry and technical drawing, while girls are at an advantage in biology and Home Economics. The discrepancy in provision arises from the scope provided by the stipulations of the Department of Education regarding subject provision. Decision on subject provision can be made at school level and this is reflected in the different provision made in vocational and secondary schools. Imminent amalgamations, considered prudent with the impact of demographic decline, should be a catalyst for equal provision in this regard.

Tied in with the provision factor is allocation. Allocation concerns the academic prerequisites a school demands before allowing pupils choose particular subjects. In Ireland a higher proportion of girls than boys are denied the opportunity to study physics, higher maths or chemistry at Leaving Certificate, because they have not done the appropriate subject at Intermediate Certificate Level. It was found that 80% of boys and only 33% of girls were in schools where physics was taught. In the schools where physics was taught, 70% of the boys and 58% of the girls were actually offered it. Finally, 53% of boys and only 16% of girls to whom it was offered chose to study it. The impact of allocation measures emphasises the importance of delaying the time at which pupils have to make their subject options in order to reduce the risk of gender typed options which pupils may later regret.

Access is a significant factor in the girls and science "problem." Just as educational qualifications provide entry but do not guarantee entry to certain professions, provision of subjects does not necessarily influence up-take. Pratt et al (1984) conclude that in England, while the sex Discrimination Act (1975) has undoubtedly improved the provision of science subjects, this has not yet affected the take up of subjects by pupils.

Several reasons are advanced for girls' reluctance to participate in the science subjects. They embrace both the overt and covert curricula. The gender-differentiated socialisation patterns, moulded in school and in society, can manifest themselves in the gender codes apparent in the hidden and open curricula. Pupils' aspirations, attitudes to subjects, perceived difficulty, while by no means polarised, are gender differentiated especially in the sciences. These factors, which are considerable in determining option choice, are resultant from a pupil's sex-role socialisation. Ebbutt (1981) found teachers' belief that girls choose biology since it was easier than the other sciences corroborated by girls themselves. They ranked physics as the most difficult of the sciences and biology the least. Participants in the Department of Education intervention project also considered physics and chemistry difficult. This underestimation of their own ability in science, mirrors the findings of Tobias (1980) who investigated Maths ability and anxiety in girls. He found their levels of confidence substantially lower than boys' and more reluctant to recognise good assessments as indicative of high ability. Even when girls achieve well the socialisation patterns preclude them from gaining self confidence in what is generally regarded as a masculine domain. It is at this level that schooling, as an ISA,plays its vital role in maintaining the capitalist status quo. The school socialises pupils in a manner which both reflects the patriarchal values of a capitalist society, in which the school is an operational necessity, and which perpetuates these divisions by socialising females into stereotyped feminine roles. However, the educational system operates to this end by means other than socialising pupils in gender appropriate norms, which can be resisted by pupils and teachers. School knowledge itself (in this case scientific knowledge) is seen as laden with male values and this constitutes the hidden process of "patriarchal logic" (Kelly 1981) which permeates all subject areas but also the "hidden curriculum" which is "permeated by patriarchal values and powerfully transmits and reinforces these," Cullen (1987).

While not all gender sociologists subscribe to the socialisation theory, it should be seen as working in conjunction with the hidden curriculum and male pedagogical bias within science. It must be conceded, however, that while schools are a forum for the creation of gender identities they are also "a vehicle for women who reject conventional expectations and wish to construct their own intellectual lives and careers (Kessler et al 1985)." It must also be acknowledged that the idea of sex-roles exaggerates the importance of individual attitudes and maximises the macro forces of the economy and society.

As discriminatory mechanisms, organisational factors such as timetabling and option choices, have considerable effect. These factors reinforce the masculine image of science by inviting sex-linked choices. The timing of option choices is identified as unsuited to girls in relation to science. Concern about their own feminine image dissuades girls from choosing a science subject identified as a masculine one.

The stereotyped masculinity of science, a product of the cultural values that surround science, is reinforced by the portrayal of sex roles in science textbooks. Such texts contribute to the hidden curriculum of male science and most importantly, texts denial of women's role in science legitimates their secondary role in public life and within the school. By implying a sexual division of labour within the scientific domain these books work on an ideological level for the capitalist state by defining and containing sexuality.

Strategies devised to deal with the problems outlined above, as proposed by the girls and science lobby have to be reviewed for their effectiveness in redressing the discriminatory practices of science education but also for their contribution to gender equality in society. This scrutiny is justified because science education does not operate in a vacuum; as part of the educational apparatus it actively promotes the patriarchal values of our capitalist society.

Reviewing the Remedies

Such a macro perspective is necessary to combat gender inequality. Unless strategies operate within the parameters of a general perspective, (i.e. identify the problem as one which can be approached through all ideological State Apparatuses) the root causes will remain intact. Hegemonic groups do not need to have women, ethnic minorities or the working class per se in subordinate positions — they require a corollary group to accept their ideology as legitimate. Therefore, attempts to improve womens' status which challenge the content, structure, and delivery of the curriculum, will be challenging the hierarchies of power which determine the position of minority groups.

Like feminist theoreticians, educationalists concerned with girls and science are in disagreement of their modus operandi. One school of thought advocates the development of girl-friendly science whereby the same concepts and scientific processes are taught to girls in a manner which counteracts its masculine image. Advocated by Smail (1984) it is a compensatory approach whereby materials would be presented in a manner which challenges stereotypes and reorganises the curriculum to present content in a social context, one which makes it more attractive to girls. This approach of altering the context has been criticised (e.g. Bentley and Watts 1986) for leaving untouched the main problem of science as a creation of the male mind. It can also be criticised for ghettoising science as a female versus male topic.

Feminine science like girl-friendly science, proposes the contextualisation of science in a manner that makes it more appealing to girls. As proposed by Manthorpe (1982) feminine science plays down the competitive element of scientific discovery and fosters discussion and co-operation as approaches to problems. Recognising that it is not sufficient to neutralise science's masculine image, Kelly advocates a "more feminine image and convincing young girls that achievement in science is a normal and acceptable part of feminine behaviour" (Kelly 1981b). She proposes that a hitherto male-dominated science could be taught to girls in unashamedly gender typed instances such as "air pressure (vacuum cleaner), heat transfer (cooking, domestic heating), density (shopping)." Thus though science as a masculine concept is not acceptable, science with a feminine image is. It appears that to eradicate the male image these educationalists have contradicted their own basic premise — that a gender discriminating science is unacceptable.

Both strategies mentioned already aim to increase girls' participation in science subjects without radically altering the basic science concepts. Feminist science, however, is not content to dally with the style of presentation or context of the knowledge. For this category it is the nature of science itself which is redefined in a manner more appropriate to the humanist approach that is thought to appeal to girls. The starting point for this type of scientific inquiry is feminine logic and consequently for Bentley and Watts (1986) this type of science differs from male dominated science due to its view of the nature of objectivity, what constitutes evidence and the views it has of the status of scientific knowledge. The changes desired by these strategies are paralleled by the inequalities highlighted by research on conventional science classes for girls. In projects such as Girls Into Science and Technology in Britain (GIST, 1984) an effort was made to counter each area seen as problematic. Teachers were counselled to be alert for interaction inequalities, curricula were rewritten to accommodate girls' interests, role models were paraded. The Department of Education Intervention Project assigned Visiting Teachers for two or three years to introduce physics and chemistry in girls' schools where they were not previously taught. Evaluation of this project must remember that it sought to increase participation in schools where no choice existed; it did not address the issue of lower participation in schools where the option of chemistry and physics already existed.

Like the liberal feminists, the proponents of the equal opportunity philosophy, the girl-friendly science lobby have misinterpreted the scale of the problem. As the equal opportunities lobby accept that education as it is presently constituted is a "good thing" but unequally distributed, the girl friendly science lobby accept the virtues of science education in principle but want to adapt the practice.

To succeed in encouraging more girls to study the sciences once they become optional would have little effect in overall gender inequality. Science, remains science; it is a socially created entity not solely an academic one. An over-concern with friendliness prevents the interventionalists from viewing the social and political nature of the science curriculum. To adapt the curricula and teaching strategies would not change the fact that selection in the sciences is linked to the technical and sexual division of labour and that the curriculum facilitates social control, (Millar, 1981, Hodson and Reid, 1987). As Yates (1985) cautions, schools should ask "What are we trying to draw girls into?" and "Why do we want to do this?"

Initiatives to involve more girls in the sciences can be categorised as "tinkering at the edges" (Yates, 1985) of the problem. The strategy to tackle inequality through single sex education can be similarly categorised. This is a common strategy used in Australia to redress the imbalance of girls' lower uptake of science and mathematics.

In a review of the single sex issue, as seen in Australia, Willis and Kenway (1986) conclude that when the deficiencies of the single sex strategy are identified it becomes apparent that co-education has the greatest potential for producing counter sexist practices.

The isolationist mentality of the single sex brigade blinds them to two crucial factors. Firstly in a single sex environment girls are achieving in a concocted social setting — there is no point in educating girls to be competent and independent if the criteria for the exhibition of such behaviour is the absence of males. Equality of the sexes cannot be achieved in the absence of either. Secondly, the single sex strategy concentrates on changing girls behaviour and neglects the fundamental problem of boys' and teachers' attitudes and the nature of the curriculum. To become truly subversive women's education would have to challenge the present form and content of education. In relation to science it should ask: science for what? for whom? and should critically review all male knowledge, scientific or otherwise (Cross, 1985).

Educationalists concerned with girls and science are gradually realising the inadequacy of dealing with the problems outside a wider perspective of power relations in a capitalist based economy. The technical division of labour in our post-industrial economy ensures that only an elite group of highly skilled personnel are required in the work place. Nonetheless, GIST researchers found that the opportunity of employment in scientific and technical areas was a significant motivating factor for girls choosing the sciences. The participants in the Department of Education Project expressed similar motives. Educating all girls in the sciences on the premise that their skills will be required by industry, or that their status in society will be enhanced by these qualifications is naive. As Kelly (1985) acknowledges "even if girls gain qualifications in science and technology, this will not guarantee them jobs in this field, or power and influence in a technological world." Strategies designed to entice more girls into the sciences should be more mindful of this reality. If they ponder on Yates' question "What is it that we are trying to draw girls into?" they will realise that to tackle gender inequalities in society, which stem from science, the nature of scientific knowledge, as a social and academic entity, needs to be examined.

Intervention strategies which operate on the premise that girls need scientific training as "prerequisite skills to pursue jobs or further training in the expanding sectors of employment," as the Department of Education Project does, are I think illconceived. Such a rationale obviously entices more girls into science courses but its contribution to equality in society is questionable.

Like the equal opportunities approach, they prefer to be immediate and pragmatic in initiatives, content to accept that their remedial actions will never cease and do not include a penetrating analysis of the problem. Equal opportunity is a polite approach to gender inequality, it assuages the conscience of policy makers and inhibits the development of worthwhile countersexist initiatives. Educationalists favouring this strategy do not question the validity of the actual schooling process, rather girls are not getting their fair share of it.

The flaw in this approach is to view the educational state apparatus in isolation form other ideological state apparatuses; immune from outside influences and working primarily to "educate" pupils.

Conclusion

By way of conclusion I would like to qualify the suitability of production theories analysis of gender inequality. Womens' position in society, if I might use the phrase, is constantly changing; their relationships within society, with people, state bureaucracies and with policy-makers ensure that the "problem" can never be identified. Consequently it is inaccurate to talk in terms of "solutions." Their positions in society are determined by roles they are allowed to occupy within specific areas. Women are subjects (persons) within discourses (areas of interaction) and the positions they occupy within these discourses are determined by the power-relations governing the site, in this case education. These accounts of girls in education should locate analysis within this context — what positions do subjects enter under our patriarchal and capitalist system.

Production theories need to be complemented by empirical analysis to investigate for instance, how unequal interaction patterns, resource allocation and organisational techniques actually create the power relations of male dominance in schools. It is only when research is extended to this paradigm, beyond the conventional exposure of discriminatory practices, that the strategies to combat such practice will become apparent. An analysis of these discriminatory mechanisms in a post-structuralist framework would provide a framework for change at the level of pedagogy.

Foucault (1977) provides a decisive conclusion.

> Any system of education is a political way of maintaining or modifying the appropriation of discourses, along with power and knowledge they carry. In every society the production of discourse is at once controlled, selected, organised and redistributed by a certain number of procedures whose role is to ward off its powers and dangers, to gain mastery over its chance events, to evade its ponderous formidable materiality. Discourse is the power which is to be seized.

By reconstituting subject positions within the discursive practices of education, the power relations in that ideology can be changed. This is the challenge facing all intervention strategies.

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THE I.N.T.O., THE BISHOPS AND THE CLASH ON SCHOOL FUNDING (1945-1954).

Noel Ward

Introduction

The poor physical condition of many national schools was widely acknowledged in the early years of the Irish Free State. In 1925 the Minister for Education recognised that schools in bad repair existed "...in a very large number of cases."[1] A year later, the National Programme Conference again drew attention to the problem. In the first of its eight general recommendations, that representative body reported:

> ...it is plain that the material conditions of our schools are often such as gravely to impair the quality of the work done in them... It is clear that any such untoward conditions call for immediate remedy if any educational scheme is to secure the desired results.[2]

The Conference listed such typical faults in school conditions as small rooms, structural and sanitary deficiencies, poor provision for heating and cleaning, and lack of playgrounds.[3]

Much of the complaint about lack of progress in the building, and inadequacies in the upkeep of national schools emanated from the ranks of the Irish National Teachers' Organisation (INTO). That Organisation held that the system of school funding itself was at the root of the lack of progress, a position which was to bring it into conflict with the Roman Catholic hierarchy.

This paper examines the differing positions of the INTO and the bishops on school funding and conditions, and the reasons why this issue came increasingly to the fore from the mid-1940s. It focuses in particular on the clash between the INTO and the hierarchy, and on why the INTO executive felt compelled to change its policy, a new direction announced by a deputation to the Primate in 1954 as a decision:-

in deference to the wishes of the hierarchy to alter its claim and to seek a remedy along the lines suggested in the Cardinal's (previous) letter.[4]

The Funding System

The national school system inherited by the newly-independent state in 1922 was "state-aided" in nature. The state assisted local initiative in providing schools by contributing the major share of construction costs and the full amount of teachers' remuneration, but did not claim ownership of the schools.[5] This structural arrangement met the approbation of the main parties who participated in educational debate in the early decades of independence.[6] The Roman Catholic hierarchy endorsed the national school system as approximating to the ideal from the Catholic point of view in a pastoral letter issued following the National Synod of 1927.[7]

The INTO, while anxious to indicate its support for the Church's ownership of schools and employment of teachers, soon came to see the school funding system as not conducive to the proper maintenance, or where necessary, to the speedy replacement of schools.[8]

The system operated in a similar manner for capital and current expenditure on buildings. For the erection of a school, the manager had to provide a suitable site and was asked to pay one-third of building costs, with the state providing the remainder.[9] As for the general upkeep of a school, the trustees and manager were responsible, but a state grant to help meet heating and cleaning costs was available.[10] Such a grant was payable only when an equivalent sum had been raised locally and was subject to a maximum determined by a school's pupil attendance figures.[11]

Both types of grant thus depended to an extent on local initiative. But a local contribution for school building (or repair) was not always demanded in practice. Quite often the state paid more than two-thirds and on occasions provided the full cost. Minister for Education Tom Derrig told the Seanad in 1942 that the state was then bearing "almost the entire cost of primary education," and in 1947 he stated that local contributions at that time amounted to less than one-sixth of the total cost of school erection and improvement.[12]

As regards the heating/cleaning grant, the INTO criticised the method of determining the maximum subsidy payable, and traced the recurring failure to expend the entire sum allocated for this purpose in the Departmental estimates to the difficulty of raising a local contribution.[13]

Towards Consensus on a Revision of the Funding System?

In the period of independence up to the mid-1940s, there was a measure of agreement between the INTO and some members of the hierarchy, at least, on a possible amendment of school funding procedures.

From 1929, the INTO held a policy position that the cost of erecting new schools should be met entirely from state funds and that items of current expenditure should be paid for through the proceeds of a local authority rate.[14] This policy was pursued throughout the years to 1954 by way of pamphleteering, public meetings, further resolutions of annual Congress, and the raising of the matter in the Dáil and Seanad.[15] It would not, however, be correct to represent this question as one of the foremost concerns of the INTO until perhaps the mid-1940s from which time, as will be seen, a more active attempt to highlight school conditions may be noted.[16]

Two members of the hierarchy in the 1930s were quoted as favouring a funding system similar to that envisaged in INTO policy. The Bishop of Down and Connor, Dr. Mageean, told INTO Congress in 1930 that in the administration of education the religious and the secular sides might be separated, and that school repair and upkeep could be in the hands of a committee subject to the Education Authority.[17] And in his lenten pastoral of 1937, Dr. Dignam, Bishop of Clonfert, criticised the condition of many school buildings and suggested that the state should pay a larger proportion of school building costs, and the full sum for maintenance.[18]

In a comprehensive setting out of the INTOs position on school funding and conditions in Seanad Éireann (1942), General Secretary T.J. O'Connell drew a distinction between the Church's claims in the religious side of education and its claims in the purely material (buildings) side. Both bishop Mageean and Pope Leo XIII were quoted in order to show that the INTO position was not inconsistent with Catholic principles.[19]

Within three years of that Seanad debate, the first public criticism of the INTOs position by a member of the hierarchy had been delivered.

Winds of Change

In the years from the mid-1940s into the early 1950s a number of factors impelled the INTO to raise with regularity and purpose its policy on school funding. Simultaneously, certain other factors served to ensure a renewed

Church determination to preserve the school funding system as a guarantee of clerical ownership of schools.

In reviewing the motions tabled for the 1945 INTO Congress, T.J. O'Connell listed building and upkeep of schools among the "hardy annuals."[20] Ironically, that Congress was to experience a foretaste of the clash with the hierarchy on the issue. Before referring to that Congress, however, the factors which underlay the hardening INTO and Church positions on school funding in this period will be examined.

The condition of national schools became an issue of public concern and debate during the 1940s. A series of County Medical Officers' reports and a comprehensive survey of schools by the INTOs Cork county committee painted a sorry picture of insanitary, unhealthy school conditions.[21] As an example of comment in the media, the *Connacht Tribune's* editorial of 9 December, 1944, highlighted the concern expressed by a woman graduates' group, and supported the

> emphatic condemnation of the badly-lit, badly-ventilated and badly-heated buildings which still form about fifty per cent of the primary schools in rural areas....[22]

The authors of the INTO *Plan for Education* of 1947 raised the school funding and conditions issue as one of a broad range which needed attention.[23] This document can be placed in a wider movement for educational advancement which had resulted in, for example, the Butler Education Act (1944) in England and Wales and the Northern Ireland Education Act of 1947.

Optimism might have been expected after the difficulties of the war years, especially in the light of assurances that concerns in education would receive attention. Minister Derrig had told the Seanad in 1942 that he envisaged a comprehensive school building programme "when normal conditions come back," and the Dáil in 1947 that only "insuperable difficulties in providing building materials" were holding up that programme.[24] The INTO might have been expected to take heart from such words.

Finally, the dramatic growth in the number of vocational schools (from 65 in 1930 to 224 by 1954), and the contrast between their condition and that of the national schools was another factor in focusing attention on the state of national school buildings.[25] INTO General Secretary D.J. Kelleher emphasised this point when writing to the Primate in 1954:

> All over the country vocational schools are springing up. No expense is spared to see that they are substantially built, artistically decorated, adequately equipped, maintained, heated and cleaned. They are surrounded by beautiful gardens, and in most cases have spacious playing fields attached. Very often they are neighbours to national schools, which lack everything which the vocational schools enjoy.[26]

For the Church, too, there were contemporary developments which influenced its position. The Catholic social movement in Ireland had by now developed considerably. One of the movement's central themes was the danger of excessive state power, a theme taken from the teaching of Pope Pius XI.[27] The Commission on Vocational Organisation, chaired by Bishop Browne of Galway and whose mammoth report was published in 1944, sustained the attack on state bureaucracy.[28] The Primate, Dr. D'Alton, was a leading figure in the Catholic social movement. Cardinal D'Alton's reference to "socialistic tendencies, now so widespread" in his letter to the INTO General Secretary of October 1952 must have emphasised for the latter that the school funding issue was seen as part of a wider question.[29] The concept of a local contribution was the legal safeguard of Church ownership of, and therefore influence in, schools; if the state paid all, it might ultimately want to control all.[30]

Perhaps, most of all, the Health Act controversies of 1947 and 1951 may have persuaded the hierarchy that the INTO position might be in education — as the bishops felt the 1951 mother-and-child scheme was in health — the device by which excessive state influence would prevail.[31]

At the opening of the INTO Congress in Galway in 1945, Bishop Browne became the first member of the hierarchy publicly to voice disquiet at the INTO policy. INTO policy, he declared, tended "directly to the abolition of the (school) management system" which had been the "legal safeguard of the freedom of Catholic education in this land." The Bishop regarded as mistaken the view that many schools were defective.[32]

On this occasion, the INTO General Secretary and the Congress delegates rejected the Bishop's criticisms, and re-affirmed existing policy.[33] A foretaste of the imminent clash on the issue had been provided, and a more insistent hierarchical voice would be heard when next the controversy was aired.

School Conditions — Disputing the Facts

There was a remarkable divergence of views in this period on the actual position regarding school conditions, as between the hierarchy and the INTO. Bishop Browne's address to the INTO Congress in 1945 had included a suggestion that there was exaggeration of the inadequacies of school buildings. The editor of the INTO's *Irish School Weekly* held that the bishop's case was weakened "...by his questioning of admitted facts about the schools' situation."[34]

The suggestion that a "grossly exaggerated, unfair and unbalanced" picture was commonly drawn of school conditions was repeated by the Bishop of Ossory in an address in 1952.[35] Later the same year, the Bishop of Achonry said that the work of replacing old schools was progressing and that this should be acknowledged and credit be given where it was due.[36] The view that the INTO's presentation of poor school conditions was "not in harmony with the facts" was expressed also by Cardinal D'Alton. On his reading , official statistics indicated that considerable progress had been made.[37]

It is necessary, then, to turn to official sources to address this question of the facts. One might ask about the state's view on the overall issue of the system of school funding as well as the actual condition of schools; the state, after all, was the main funder and supervisor of the national school system.

As has been noted, successive Ministers for Education approved of the state-aided nature of the system. In 1953, during the period of the controversy under review, Minister Moylan made clear his support for the retention of a local contribution in the case of both building and upkeep of schools.[38]

On the question of the conditions of the stock of schools, however, it is fair to say that official figures and statements lent more weight to the teachers' argument than to that of the bishops.

Minister Derrig acknowledged in the Dáil in 1944 that 1,000 schools needed replacement and that a further 1,500 required substantial repair.[39] The INTO in its *Plan for Education,* therefore concluded that out of a total of some 5,000 national schools some 50 per cent were defective.[40]

At the rate of new school building for the 1940s — less than forty schools per annum on average — it would have taken some twenty-five years to replace the 1,000 schools which the Minister had deemed in 1944 to be in that need.[41]

At the INTO Congress in 1952, at a time when the hierarchical emphasis was on recognising the progress made, Minister Moylan said that the number of practically derelict schools was "...nearer eight or nine hundred."[42] The same Minister told the Dáil a month later that for the following five or six years the annual rate of school building should be doubled, from about fifty, "...so as to destroy the existing evil condition."[43]

As it turned out, although a high point of erecting seventy new schools was reached in 1953-1954, the figures before and after that were less impressive and the average annual building rate for the five years to 1954-1955 was 47 schools.[44]

Official figures, then, confirm the substance of INTO complaints about school conditions. The INTO's claim that the system of joint responsibility retarded progress applied also to the disbursement of the heating/cleaning grant. Here, longstanding dissatisfaction also came to the fore. In the school year 1952-1953, for example, the sum allocated — £66,000 for some 4,800 schools — was not all spent, and the allocation was cut by £1,000 for the following year.[45] The INTO protested, not for the first time, in 1954 as to the amount of grant and as to the regulations governing its disbursement.[46]

Whatever the merits of either side's argument during the controversy it must be acknowledged that spending on national schools and the physical condition of these schools remained grossly inadequate long after the dispute between teachers and bishops ended. Not until 1962 was the first state grant for national school maintenance made.[47] And official figures indicated that, in 1960, 40.5% (1,978 of 4,882) of Irish primary schools were unsuitable for use.[48]

The Dispute Develops

The INTO Congress in 1949 resolved to ask the Minister for Education to summon a conference to examine the question of school conditions.[49] Later that year, the INTO executive issued a questionnaire to members, seeking information on several aspects of the condition of their schools. The completed survey form was to be returned to the INTO head office by the end of February, 1950.[50]

The hierarchy's displeasure at the INTOs action was evident in the account given in the executive's report to the 1951 Congress:

> In June, 1950, His Grace Most Reverend Dr. McQuaid,

> Archbishop of Dublin asked the General Secretary to call to see him. The interview took place on June 7th. His Grace, speaking on behalf of the Hierarchy, said that they (the Hierarchy) were very perturbed and displeased at the issue of the original circular. The maintenance of schools was the responsibility of the managers and an inquiry into the performance of that duty was outside the province of the teachers....[51]

Having considered the Archbishop's intervention, the INTO executive set out at his request its object in issuing the questionnaire, and resolved "in deference to the Hierarchy" not to pursue the demand for a conference at that time, but instead to seek a meeting with the clerical managers on the subject of school provision and upkeep.[52] The fact that it took nearly four years for the INTO to be granted such a meeting with the clerical managers' association will not be discussed here, but is an indication of the bad relations to which the differing positions on this matter gave rise.[53]

Before the modified INTO position of meeting the clerical managers could be put into effect, a more vigorous episcopal assault on the overall INTO policy was launched. In June 1952, the Bishop of Clogher, Dr. O'Callaghan, attacked teachers and their organisation from his pulpit for their attitude in connection with school building, heating and cleaning. He suggested that the INTO sought to take the schools out of the hands of the managers, and that the generation of teachers then in the schools saw themselves as being above the menial tasks involved in heating, cleaning and upkeep.[54]

the INTO executive challenged the Bishop to prove his accusation about the INTOs intentions, and sent a deputation to the Archbishop of Dublin to lodge a protest. Letters of protest were forwarded also to the bishops' secretaries and to the Primate, Dr. D'Alton. The latter written protest, at Dr. D'Alton's request, took the form of a submission setting out INTO policy on the matters raised by the Bishop of Clogher.[55]

General Secretary Kelleher in this submission traced the history of the INTOs position, referred to "eminent Churchmen' who had previously supported the idea of local education authorities, stressed the organisation's support of the managerial and ownership system, and complained of the managers' failure to meet the INTO.[56]

The Primate's reply to the INTO followed the hierarchy's meeting of October, 1952. Disclaiming responsibility for any one bishop's pronouncements, Dr. D'Alton nonetheless outlined the very strong objections of the hierarchy to the INTOs campaign. Writing "for the future guidance of the Teachers," the Primate evinced that the campaign was a threat to the entire managerial system. Widespread "socialistic tendencies," and evidence of progress in school improvement were quoted in support of the hierarchy's view. Dr. D'Alton concluded his letter by stating:-

> The Bishops feel confident that the INTO, now that it has been made fully aware of their views on the managerial system, and of the real facts of what the system has achieved in recent years, will discontinue its campaign.... and that its activities in this matter in future will be directed mainly towards securing a larger allocation of State funds.[57]

INTO Agrees to Desist

The INTO executive made no immediate decision in relation to the contents of the Primate's letter. The organisation's 1953 Congress did, however, approve a resolution which was very much more in line with episcopal wishes and which did not mention full public funding. A Dublin delegate at that Congress reportedly felt that it was "...to be regretted that their beloved Cardinal should have found it necessary to speak to teachers in such a strain."[58]

A group from the INTO executive which was preparing to meet Cardinal D'Alton to discuss the building, heating and cleaning of schools, first met the Minister for Education in December, 1953. These representatives sought a statistical briefing in preparation for the meeting with Dr. D'Alton. Having, apparently, failed to receive the information which they had sought officially, the INTO executive in April 1954 asked that the Cardinal meet a deputation.[59]

In May 1954 this deputation met Cardinal D'Alton and advised him that the executive "in deference to the wishes of the hierarchy" had decided to proceed as advised in the Cardinal's letter. The deputation also summarised replies to the 1950 questionnaire which "indicated that the position was far from well in general" as far as school conditions were concerned.[60]

At Dr. D'Alton's request, the INTO General Secretary forwarded a letter, outlining the revised INTO position, to the hierarchy on 24 May, 1954.

In this very lengthy letter, the modification of INTO policy was confirmed and Secretary Kelleher listed measures which, he believed, had tended to "degrade and undermine" the system of national education which was so close to Church teaching. He also made a number of proposals for joint activity with the clerical managers on the issue of school conditions and expressed a "deep sense of grievance" at the managers' continued failure to agree to meet with the INTO. D.J. Kelleher concluded by declaring the support of teachers for the national education system:

> As educated Catholics we know and believe in the principles of the social teaching of the Church in education, and we see in that system (of national schools) the most effective way to put these principles into practice. If, therefore, there is anything in the submissions that we have taken upon ourselves to make in this memorandum that may seem presumptuous, we feel sure that your Eminence will accept this interest as our justification.[61]

Conclusions

The INTO's change of direction on the school funding issue in 1954 may be understood in the light of the dominance of the Roman Catholic ethos in society at the time. Since government deferred to the hierarchy in a matter of legislation, the INTO's compliance in this matter might have been expected by the bishops.[62]

The close relations which had existed between the INTO and the hierarchy over previous years undoubtedly also contributed to the teachers' reluctance to damage a link which had become important in the Organisation's affairs and which had proved of practical benefit on a number of occasions.[63] The General Secretary's portrayal of the INTO in 1954 as a loyally Catholic body, while inappropriate in an organisation not exclusively Catholic in membership, mirrored the sentiments of contemporary legislators.[64]

There was an inevitability about the outcome of a clash between the bishops and the teachers' organisation on an issue where a Church principle could be presented as the central issue.[65] The clash had allowed a testing of the relative strengths of the two groups to take place. The school conditions debate, meanwhile, was by no means over.

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53. See Noel Ward, *The INTO and the Catholic Church*, pp.231-246.

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57. Quoted in full in Noel Ward, *The INTO and the Catholic Church*, pp.276-278.

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61. Quoted in full in Noel Ward, *The INTO and the Catholic Church*, pp.279-285.

62. J.H. Whyte, *Church and State in Modern Ireland*, p.232.

63. For a detailed examination of INTO Catholic Church relations in this period, see Noel Ward, *The INTO and the Catholic Church* esp. Chaps.3,4.

64. J.H. Whyte, *Church and State in Modern Ireland*, pp.196-238.

65. The objection in principle to full state funding of schools would appear to have been set aside since this controversy : see, for example, reported speech of Dr. Murphy, Bishop of Cork, in *Catholic Herald and Standard*, 6 March, 1987.

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THE LIMITS OF PATERNALISM IN EDUCATIONAL RELATIONS

Kevin Williams

Introduction

It is with a degree of self consciousness that I offer a paper on what must be the most perennial and classical problem in philosophy of education. It remains, however, a very live issue in current literature in the area and it is an issue which is very acute both for student teachers, teachers and parents.[1] Moreover, when in a recent article I suggested that Irish might be made optional at the senior cycle of post primary education, I encountered some of the very fixed ideas which the general public and many educationalists have about the justifiability of paternalism in educational relations.[2] In discussions, particularly with students, on the argument presented in the article, I found that many of them hold a very paternalistic view of the nature of authority in education. This is the view according to which, on the basis that it is for their own good, we are justified in compelling young people to learn regardless of their own wishes in the matter. In this paper I wish to examine the nature of this paternalistic authority which adults arrogate to themselves to encroach without their consent on the freedom of children and I would hope to reach some conclusions regarding what might be the justifiability and limits of this authority.[3]

Readers may find it useful if at this stage I outline the structure which the argument of the paper will follow. After a statement of the precise nature of the problem posed by the notion of authority in the situation of compulsory school attendance, an attempt is made to defend a notion of moral authority in the case of those who are compelled to attend school. An attempt is then made to identify what might be the limits of even a morally defensible conception of paternalistic authority in education. The paper concludes by applying some suggested guidelines on this matter to one particular controversial issue in education in the Irish Republic.

Stating the Problem

The consent of the obligated, which is arguably the basis of any obligation, is not required in respect of children subject to compulsory school attendance. This means that for young people the school is an institution, membership of which is compulsory, and education is a practice, participation in which is compulsory. Yet in respect of other institutions, such as sports clubs or political parties, we would find the idea of compulsory membership unacceptable, if not somewhat absurd.[4] And let us consider how compulsory participation would apply in respect of other practices. No one would think that we could force an individual into a relationship with a doctor, a bookie, or an opponent at chess in the manner in which pupils are forced into a relationship with a teacher. Participation in the practices of medicine, betting, and chess playing presupposes, on the part of the participants, freedom of choice in respect of their participation. Nor would anyone (normally) attempt to force adults to participate in education, not only because such compulsory education is unlikely to meet with success, but also because it is morally offensive and forbidden by law. Indeed Western moral sensibility finds profoundly objectionable any attempt, such as that of the Pol Pot regime in Kampuchea, to subject adults to compulsory education.

The problem then is to determine whether there are grounds on which we as adults have the right to impose our demands on young people irrespective of their consent in the matter and even in cases where they have refused this consent. Can adults, therefore, be said to enjoy a right not only to compel children to learn, that is, to force them to learn regardless of their own wishes but even to coerce them to learn, that is, to force them to learn in spite of or against their own desires in the matter? We should note that the use of coercion is clearly more problematic than the use of compulsion. This is because many children compelled to attend school would choose to do so anyway if such a choice were available. Coerced actions are, therefore, a particular subset of compelled actions.[5] But let us examine more closely the ingredients of the teacher's authority as it is presupposed in contemporary practice.

Consent, obligation and the moral authority of the teacher

The view of the teacher's authority underlying the current practice of compulsory schooling is that the conferring of formal or legal authority presupposes that the teacher has epistemic authority, that is, a reasonable mastery of his skill or body of knowledge, together with a degree of pedagogic expertise in communicating this to his pupils, and an ability to achieve some level of social control over these pupils. Presupposed also is the view that conferring legal authority confers moral authority and so, according to current practice, legal/formal authority and moral authority are considered to be co-extensive. This means that a teacher who has been appointed in accordance with legally recognised procedures, and whose actions are in accordance with the provisions of law, has moral authority for these actions.

The non-adult status of children is seen as providing moral justification for the teacher's right to encroach upon their freedom without the children's consent and to subject them to compulsory schooling. But it is possible to call into question the justifiability of the paternalistic authority which adults assume to encroach on the freedom of young people in this way. On the grounds that consent is the only basis for obligation, we may argue that compulsory education is not morally justifiable. As they are not obligations of their own choosing, children cannot be obligated either to attend school or to comply with the demands of teachers.

Accordingly we are presented with two contrasting options. On the one hand, on grounds of their immaturity, we can deny to children status as moral agents and by this argument justify our right to violate their autonomy by subjecting them to compulsory schooling. On the other hand, we can argue that, as consent is the only basis for moral obligation, subjecting children to compulsory education involves subjecting them to obligations which are not of their own choosing and so is not morally justifiable.

In my view there is something unsatisfactory about both opinions, that of denying to children, because of their immaturity, status as moral agents in their own right and that of claiming that consent is the only basis for any moral obligation. After all, consent does not enter into the filial obligations which children are recognised to owe to their parents. The attribution of obligation to pupils subject to compulsory school attendance is, I would argue, related to the *quality* of the teacher's authority. The quality of the teacher's authority must be moral; it is not simply legal in nature. Where the teacher's authority is moral or just, and can be seen to be so, then we can speak of the attribution of moral obligation to pupils. How then shall we determine the moral basis, the justness, of the teacher's authority? The basis of the teacher's moral authority (which provides also the grounds on which we can attribute obligation to the pupils) is connected to the nature of the demands which he makes of the pupils. There are *four* conditions attaching to these demands. The demands must be such as impose reciprocal obligations on those who make them; are conducive to the promotion of the welfare and interests of the children; are of a reasonable character; are capable of being justified to the pupils.

With regard to the *first* condition, P.F. Strawson points out that a demand made on an individual can be regarded as a moral demand "only if it belongs to a system which includes demands made on others in his interest."[6] Accordingly, we can say that, although it is not an obligation of his choosing, a child is obligated to his parents because his parents, as parents, have reciprocal moral obligations or duties to him. Similarly, in the educational context, we can say that pupils are obligated by the demands made on them where the teacher and school authorities, who make these demands, are bound by reciprocal moral and professional obligations or duties to them. Accordingly, if we expect young people to undertake to learn, then we must fully accept our duty to make every effort to teach them. And while this may seem fairly self evident questions must be asked about the extent to which all of our schools undertake seriously to teach all of our young people, rather than simply those who are likely to prove successful in terms of the culture of the written word. Indeed, in recent years, research in sociology of education suggests that some schools have given up seriously trying to educate certain kinds of pupils and that teachers are simply pandering to the wishes of their constituencies of learning/school refusers.[7]

Secondly, our demands must be such as will genuinely tend to promote children's welfare and interests. We are not only morally justified in imposing demands on children which are intended to promote their welfare and interests, but we are morally obligated to do so. This is because children are not always the best judges of their own good and are not in a position to make informed judgments about the desirability of education or about the kind of education which they should receive. And one major feature of the children's welfare which is being promoted through compulsory schooling is to increase their capacity to exercise freedom and autonomy. This is a capacity which may not be developed by giving children the freedom to choose whether or not to become educated or what and how they should learn.[8] In principle, therefore, on the grounds that it is in the interest of the children's welfare, the duty of adults to endeavour to educate them has moral priority over the children's right to choose in the matter. (In the next section I shall say something about the limits of the priority which the wishes of adults should enjoy in this respect).

For the moment I wish to consider the *third* condition, namely, the issue of the reasonableness of the teacher's demands and of how can we determine the reasonableness of these demands. Obviously it is not easy to do this with great precision, but something must be said on how some determination of what constitutes reasonableness might be arrived at. In a strict sense, the boundaries of reasonableness are prescribed by the provisions of civil law. Most dramatically, for example, a teacher's right to inflict corporal punishment is a matter for statute, and even where tolerated, the right is subject to legal controls. Any penalties which schools impose on delinquent pupils are similarly subject to law. For example, school authorities are limited in the manner and extent to which they can impose on pupils detention after normal school hours; parents must be alerted, pupils must be allowed time for meals, and they can hardly be detained overnight. Of course, an individual teacher may feel, on personal moral grounds, unable to make full use of his full legal rights in managing his pupils, and on these grounds, for example, he may refuse to administer corporal punishment.

The fact that not all teachers will find reasonable what the law either prescribes or proscribes leads me to argue that the determination of reasonableness in respect of educational demands is a question which must be addressed from within the educational community. Just as doctors can justify such severe and painful treatment as chemotherapy, radium and cobalt therapy, a code of pedagogic ethics, based on the collective wisdom of the educational community, might be similarly elaborated. This does not mean that definition by the educational practice will be unanimous, or that it should be immune from the criticism of the wider community. Just as, for example, the administration of shock treatment in cases of mental illness can be criticised from outside the medical profession, so also should decisions of educators regarding, for example, whether the use of corporal punishment should be permitted, or whether the school leaving age should be raised. Other matters which would be the subject of such decisions would be the appropriateness of curricula to the abilities and sensibilities of the pupils; the appropriateness of methods of assessment used; the nature and limits of any sanctions, together with specification of the conditions in which they can be invoked. In deciding these and other questions, ultimately, the emphasis must be on the professional judgment of those who actually teach the children, i.e. the teachers themselves. This is not to deny that educational administrators and academics have their role to play in devising a defensible code of educational practice. Indeed, there is no reason why pupils themselves should not have a voice in deciding these questions.

This takes us to a consideration of the *fourth* condition, that is, the need to justify the demands of the teacher to the pupils. In making demands of them, the teacher must be prepared (within limits) to bring the pupils to understand why these demands are made by representing them in the light of the previous conditions. The teacher must show how he is bound by reciprocal moral and professional obligations to the pupils and that the demands which he makes are intended to promote their welfare and that they are reasonable. In a compelled but justifiable form of social intercourse, those individuals subject to compulsion must be brought to see that the authority to which they are subject is not arbitrary. By making clear the point or purpose of the demands which he makes of his pupils, a teacher will minimise the coercive nature of the educational enterprise. By explaining the reciprocal obligations by which he is bound to them, the teacher may succeed in engaging the pupils' consent in a contractual manner and thereby eliminate compulsion entirely. The kind of authority which is genuinely moral is, indeed, that which is the most conducive to outcomes which are most educationally fruitful.[9]

Determining the limits of Paternalism

Of course I am aware that even where the above conditions are observed there remains an issue which has not yet been addressed. What of the pupil who understands and accepts the foregoing conditions and yet refuses to learn a particular subject or to engage in a particular school activity? Are there limits to the right of adults to compel children to learn (that is, to force them to learn regardless of the children's own wishes) but even to coerce them into learning (that is, to force them to learn in spite of their own wishes)? I propose next to focus in particular on the latter situation, i.e. on the use of coercion in education. (Remember that many children compelled to learn would do so anyway if they were given a choice in the matter) and then I shall try to apply some suggested guidelines to one practical example.

We must remember, firstly, that there are limits to what we can force others to do against their will. It is possible, in principle, even under conditions of the most extreme coercion, to resist the author of such coercion, as happens in the case of martyrs. The formal freedom which is presupposed in the notion of human agency cannot be taken away, even by a creator. We cannot ensure certainty in endeavouring to convert others against their will to our purposes and so our power can never be absolute and irresistible. This formal freedom inherent in the nature of human agency, then, sets limits to what human beings may be made to do against their will by force or by the threat of force. In the educational context, therefore, moral considerations apart, the use or threatened use of physical force alone cannot guarantee learning in a situation where the pupil is absolutely determined to resist it. Where his will is unshakeably set against it, we cannot force a pupil into making an effort to understand something, let alone into understanding it. And while this may appear fairly self evident, it may be a reality that is not always honestly faced in our system. Where, for example, a young person absolutely refuses to learn a particular school subject or to engage in particular school activity, he cannot be forced to do so.[10]

Such then are the actual limits to what we *can* force others to do against their will. But are there limits to what we *should* try to force young people to learn against their wishes? In determining these limits *three* factors ought to be taken into account. Firstly, there is the *age* of the young person, as normally one expects that children will become more capable of reaching mature decisions as they grow older. Accordingly, the situations in respect of a six year old and a sixteen year old are different. We would not tolerate a seven year old opting out of English or Mathematics class and we would hardly wish to force all Leaving Certificate students to study musicianship. Indeed, in the Irish Republic young people beyond the years of compulsory schooling have, in principle, considerable choice with regard to options at senior cycle. The years at which the greatest difficulty will present itself are those in the junior cycle stage of secondary school. Even here, however, I would argue that as adults we cannot assume that we always know better than the child himself what is in a particular child's interest. Moreover, we must be careful to distinguish arguments about what is in the child's interest from rationalisations which are really concerned with what is in the interest of the administrative convenience. I am not condemning arguments based on genuine administrative/resource constraints but rather I am asking that they not be disguised as being in the interest of the child. There may be no administrative mechanism in a school to provide for a young person of, say, fourteen who just does not want to study commerce, for example, and this may be the only reason that the child is forced to remain in commerce class. But this should be admitted as the reason for continuing with the situation and the interests of the child should not be disingenuously represented as the reason.

Secondly, we must take into account *the importance* of the activity to the young person's future life. Here I would argue that considerations of *utility* are paramount and such considerations would justify strenuous efforts to try to help even reluctant young people to become literate and numerate and to promote their physical health. Young persons who are disfunctional in these areas are not only disadvantaged with regard to the prosecution of their own material welfare but they also risk becoming a burden to others in society.[11] Thirdly, we should take into account the degree of *familiarity* which the young person can reasonably be expected to have with the subject. Where students have had long experience during their schooling of a particular subject or activity, they are in a good position to judge whether to continue with that subject or activity.

Summary and Conclusion

Before concluding, I should like to draw together the strands of the argument offered in this essay. The authority of adults to subject young people to compulsory school attendance was shown to be linked to the moral quality of this authority. The basis of the teacher's moral authority (which provides also the grounds on which we can attribute obligation to the pupils) was said to be connected to the fourfold nature of the demands made of the pupils. These must be such as impulse reciprocal obligations on those who make them; are conducive to the promotion of the welfare and interests of the children; are of a reasonable character; are capable of being justified to the pupils. The actual limits to paternalistic authority were explained and the three factors to be taken into account in determining the moral/educational limits of this authority were then suggested.

I should like in conclusion to apply the above conditions to an aspect of the post-compulsory stage of education in the Irish Republic. Young people in senior cycle of post primary schools are no longer subject to legal obligation to attend school. Accordingly, and consistent with the practice in most countries, it seems reasonable to assume that at this stage of their education they would no longer be legally compelled to study any particular subject or subjects. At the end of the years of compulsory schooling young people are normally considered to be mature enough to make decisions regarding the subjects which they will study. And this indeed is largely the case in this country also, even with regard to the study of English. The study of Irish, however, is still compulsory for all legally recognised pupils for the Leaving Certificate. As the law stands at present, even at this stage of their education no discretion is allowed to individual pupils, to their parents or to school authorities with regard to the study of Irish. Now I want to ask whether it is justifiable on paternalistic grounds to prescribe a particular subject for compulsory study beyond the years of mandatory school attendance. As I shall be applying the above three conditions regarding the limits of paternalistic encroachment on the freedom of young people, I shall concentrate on arguments based on these conditions and so shall not address directly any other arguments regarding the compulsory status of Irish.[12] If we apply the first condition on the limits of paternalistic authority, it must be recognised that we are dealing with young people who are no longer legally obliged to attend school and so can reasonably be expected to be mature enough to choose whether or not they wish to continue to study any particular subject, including Irish. Moreover, being free of legal obligation to attend school, *a fortiori*, they should no longer be obliged to study any particular subject. In respect of the second condition, I do not believe that it could honestly be argued that considerations of its incontrovertible utility to young people would justify forcing those who do not wish to do so to continue with the study of Irish beyond the years of compulsory schooling. Nor can it be claimed that an individual who has not studied Irish to the conclusion of senior cycle risks becoming a burden to the rest of society. And, thirdly, it must be acknowledged that students will have had long experience and familiarity with most school subjects, including Irish, and so will be in a good position to judge whether they wish to continue to study any particular subject.

For these reasons the conclusion seems inescapable. The policy of compulsory Irish at senior cycle is not sustainable on educational grounds. No doubt some people will find this conclusion unwelcome, but it is the business of philosophy to conduct its enquiries, wherever they lead, with honesty, impartiality, dispassion and with as much rigor as possible. Only you can tell me whether this enquiry is of such a nature.

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2. K. Williams, "Reason and Rhetoric Curriculum Policy : An appraisal of the Case for the Inclusion of Irish in the School Curriculum," *Studies*, Vol.78, No.310 (Summer, 1989).

3. I am well aware of the sexist connotation in the term "paternalistic" but I do not think that it makes any difference to the argument of this paper. Arguably it is true, as my colleague, Anne Kenna, has pointed out to me, that notions of nurturing and care would perhaps be more to the fore if we could use the term "maternalism." Nevertheless, the principle of encroaching on the freedom of another human being would remain the same.

4. Perhaps the only institution comparable with the school in respect of the compulsory quality of membership is the family.

5. There is a very good discussion of this distinction in Callan, *Autonomy and Schooling*, pp.99-100.

6. P.F. Strawson, "Social Morality and the Individual Ideal," *Philosophy*, Vol.36, No.136 (Jan. 1961), pp.1-17, P.10.

7. See, for example, Peter Woods, "Teaching for Survival" in Andy Hargreaves and Peter Woods (Eds.), *Classrooms and Staffrooms : The Sociology of Teachers and Teaching*, (Milton Keynes : Open University Press, 1984), especially pp.53,54. Many of the other essays in this collection tell a similar story of the benign neglect of the less

academically able or inclined. For an account of a possible response to this state of affairs see T.G. Gaden "The Case of Specialisation," *Irish Educational Studies*, Vol.3, No.1 (1983), pp.47-60.

8. K.H. Lawson, *Philosophical Concepts and Values in Adult Education*, (London : Open University Press, 1975; revised edition, 1979), p.86.

9. See John Wilson, *Philosophy and Practical Education*, (London, Boston and Henley : Routledge and Kegan Paul, 1977), p.59.

10. More common, of course, than the use of mere force in education (or what should perhaps be called schooling) in situations where pupils refuse to learn is the use of threatened use of penalties. Penalties may include detention, exclusion from a desired activity such as a school dance, suspension from the classroom or from the school, and in cases of absolute refusal to learn there is the ultimate sanction of expulsion from the school. Fear of the consequences of non-compliance with the teacher's demands may certainly motivate a pupil to learn and such fear is not in itself inimical to the acquisition of genuine understanding. Here we are not dealing with fear of punishment, we are speaking only of the fear of penalties imposed from resources of power, where none of the considerations of moral propriety implied in the notion of punishment comes into play. Apart from offering no guarantee of success, the use or threatened use of penalties solely as an instrument of power and as the sole means of getting pupils to learn is incompatible with a conception of education in which what is done is valued for its own sake or no account of the interest which it offers on its own account. Where a pupil learns something solely as a consequence of threats from his teacher, clearly such learning is in no sense related to the intrinsic interest or value of the subject matter in question and so simply cannot count as being genuinely educative in nature.

11. See John Wilson, *Philosophy and Practical Education*, (London, Boston and Henley : Routledge and Kegan Paul, 1977), p.59.

12. Other arguments of an educational nature here would concern the possible counter-productivity of enforcing the study of Irish at this stage in their education; the statistics of results in the Leaving Certificate which indicate that the amount of Irish being learned is at least discouraging from the point of view of the policy of compulsion; the apparent trend towards adopting the typically Irish solution to the problem whereby school authorities turn a blind eye to young people

who refuse to study the subject in their classrooms; the unlikelihood of finding some methodological panacea which will mean that the natural ability, hard work and effort required in the learning of any second language could somehow be circumvented in the case of Irish.

But, of course, it may be argued that the compulsory status of Irish at this stage of a young person's education is based on political rather than educational considerations. Here I am thinking of the argument which would seek to justify continuing with compulsory Irish beyond the years of compulsory schooling in terms of the pursuit of national cultural aspirations. And there is the argument of a more expedient nature which is based on the need to maintain the employment of teachers of the subject. See Williams "Reason and Rhetoric in Curriculum Policy."

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SECOND LEVEL MATHEMATICS CURRICULA : THE REPUBLIC OF IRELAND IN INTERNATIONAL PERSPECTIVE

Elizabeth Oldham

1. Introduction

This paper considers second level mathematics curricula in the Republic of Ireland. In particular, it examines them in the context of findings from international studies in which the country has participated, and discusses the implications for curriculum review.

The so-called "new mathematics revolution" affected mathematics curricula in many countries from the 1950s onwards. The first "new" curricula were introduced at Senior Cycle in the Republic in 1964, and a further succession of updates took place over the following twelve years. In this period also, fundamental changes occurred in society and in the school system, thus altering the context in which mathematics (and other) curricula were taught. These developments can now be seen in perspective and considered in the light of similar happenings elsewhere.

A major international investigation into mathematics education, the Second International Mathematics Study (SIMS), was begun in 1976 and continued into the mid-1980s. Its findings — both interim and final — have helped mathematics educators to interpret the experiences of many countries in the period in question. Individual countries began issuing their national reports in the early 1980s but the international reports are being published only as the decade ends.

The preliminary results have already been of value for our understanding of mathematics curriculum change in Ireland. The final versions opportunely supply detail which is of particular relevance in two respects. First, the country recently took part in another international study, the International Assessment of Educational Progress (IAEP); it measured achievement in mathematics and science. The curricular findings from SIMS provide a background against which the IAEP mathematics results can be interpreted. Secondly, a further round of changes in the Irish mathematics curriculum was initiated in recent years. The SIMS investigations offer a framework within which to view alterations introduced at Junior Cycle level; and they provide crucial insights and possible guidelines for the work now taking place on curricula for the Senior Cycle.

Hence, the main features of the Study are outlined in the second part of this paper. Key results on relevant features of the education systems and on the content of their mathematics courses are described in the third and fourth parts respectively. The results of greatest interest for Ireland are highlighted in each case. The findings are then applied to current issues in Irish education. First, in part five, they are used to illuminate the outcome of the IAEP study. This leads to an examination, in part six, of implications for the current review of Irish second level mathematics courses. The paper concludes with part seven.

2. The Second International Mathematics Study

The second International Mathematics Study, SIMS, is a cross-national investigation of *mathematics curricula*, classroom practice, and *student achievement and attitudes* in second level education. It was carried out by the International Association for the Evaluation of Educational Achievement (IEA). Some two dozen education systems — including those of England and Wales and of Scotland as well as of the Republic of Ireland — were involved. They are listed in the Appendix to this paper. As the Study could not span the whole of second level education, it concentrated on two target populations:

— **Population A :** all students in the grade containing the modal number of thirteen-year-olds;

— **Population B :** all students in the terminal grade of secondary education who were taking mathematics as a substantial part of their course.[5]

The investigation of mathematics curricula — the *Curriculum Analysis* — is of particular relevance to this paper. The Curriculum Analysis had two main aims : to *describe* curricula, in such a way that cross-national similarities and differences were highlighted, and to *provide a background* against which data from other components of the Study could be interpreted. The author was a member of the international Curriculum Analysis Group as well as being Ireland's national research co-ordinator, and so can give an account of both national and international aspects.[6]

Data for the analysis were collected in a variety of ways. In particular, lists of topics likely to form part of the curriculum at each of the two population levels were drawn up; and representatives of each education system were required to declare the "importance" of each topic within their curricula. They were also asked to state the behavioural levels (computation, comprehension, application or analysis) at which topics were intended to be taught. The resulting *content-behaviours grids* are cornerstones of the Study.[7] National representatives' responses highlighted those parts of the grids that were common to the curricula of many of the participating systems. Test items were written for the corresponding topics. The most obvious role of these test items was in forming the instruments used for the Student Attainment component of the Study. However, they also contributed to the Curriculum Analysis. National representatives estimated which items were "appropriate" to their national curricula, thus providing more detailed information, albeit on a limited range of topics, as to the (intended) curricula in their systems. Moreover, in several education systems, when classes took the tests, their teachers indicated whether or not the students had had the "opportunity to learn" the relevant mathematics for each item. This provided information on the actual taught curricula.[8] Thus the content-behaviours grids supplied a framework within which curricular data — the importance ratings, appropriateness ratings, and opportunity-to-learn ratings — could be collected systematically. However, such data could not capture all the nuances of the various curricula. Moreover, interpretations made by the Curriculum Analysis Group without due understanding of the differing contexts and cultures involved might have led to serious misrepresentations. Consequently, contextual data (regarding the structure and organisation of the various education systems) were given prominence,[9] and also, many consultations were held with national representatives, in an attempt to ensure that the Group's analyses and syntheses were consistent with national perceptions.[10]

Results for the Curriculum Analysis were presented under two main headings : those concerned with the *context* of mathematics education (its setting and organisational structure), and those concerned with the *content* (the mathematics in the syllabuses). This format is used below.

3. Curricular context : Ireland in international perspective

As regards context, it must be noted first that the various national populations differ somewhat.

For Population A, the grade cohort with the modal number of thirteen-year-olds, the main differences involve the position of the relevant grade in the various school systems. A couple of Population A's are still at primary level;

most are in their first or second year of post-primary schooling; some are in their third such year. Moreover, in a few systems the correct choice of Population A was not immediately obvious. Ireland provides an instance. The Population A grade is the first year of post-primary schooling; but at the time of definition it contained only 45 per cent of the relevant cohort. Forty per cent were in Second Year, and the remainder chiefly in primary school.[11]

The Population B groups designed to represent the mathematics/science specialists in the various education systems, are much more varied. They reflect different structures for Senior Cycle education and also different rates of retention, both in school and in mathematics courses. Ireland's unspecialised Senior Cycle programme and consequent high retention rate in "substantial" mathematics courses are conspicuous. Since Leaving Certificate Higher level mathematics is not a prerequisite for further study of science, the Irish Population B was defined as all students in their Leaving Certificate year taking mathematics in the Leaving Certificate. At the time at which the Study collected data, just over half the students in the age cohort sat for the Leaving Certificate; and almost all these students took mathematics as one of their examination subjects. Thus, Ireland's Population B contained fully 50 per cent of the age cohort. (The proportion is now even larger). Only Hungary, with a 50 per cent retention rate in school and no dropout from mathematics, reported comparable figures. By contrast, in England and Wales and in Israel, Population B consisted of only 8 per cent of the age cohort.[12]

Another point of interest is the number of different mathematics courses available to the target populations. For Population A, about half the systems offered just one course (or multiple courses which, at this level, did not yet differ effectively); the other half provided some significant choice of programme.[13] There did not appear to be a cross-national trend towards either situation. In Ireland, the courses at the time in question were those for the Intermediate Certificate (Higher and Lower) and the Group Certificate. In theory they shared a common first year, putting the country in the "one course" group. Since then, however, the more clearly differentiated Syllabuses A, B and C for the Intermediate (and now the Junior) Certificate have been introduced. It is of interest to note that recent moves in England and Wales have been in the opposite direction : towards greater uniformity than before.[14]

At Population B level, the Study found almost universal differentiation of one kind or another. Many patterns of organisation were observed, ranging from those in which only a small number of students take substantial mathematics courses (studying the subject in depth) to those in which most or all Senior Cycle students take a reasonably extensive course in mathematics.

Ireland, as already indicated, is in the latter group. Again the situation in England and Wales offers a contrast; the system is perhaps the archetypal member of the former group, and this accounts for the system's very small Population B.[15]

A final relevant point is the extent to which control of curriculum and certification of achievement is a national or a local concern. In most systems, there is a national curriculum (or there are national curricula), typically prescribed by the Department of Education or its equivalent. Usually also there are national centrally-run examinations, at least at Population B level — although some systems have introduced school-based (but centrally moderated) assessment, and the North American systems determine standards locally.[16] Ireland's very centralised system is thus the norm rather than the exception. It does, however, give the impression of being rather more inflexible than most.

4. Curricular content : Ireland in international perspective

It is against the varied contextual backgrounds that content is now considered.

For most of the systems in the Study, the period 1960-1980 was one of extensive curricular change. In some cases, rather radical curricula were introduced and subsequently modified; in others, the process was one of evolution rather than revolution.[17] The main focus of the Study is on the situation achieved — by whatever route — in the early 1980s.

The data point to the existence by that time of some kind of international mathematics curriculum : a body of mathematics, much of which is taught — or intended to be taught — to students in most systems. Deeper analysis suggests that it may be more helpful to distinguish several international curricula, each one typical of the mathematics taught in a group of systems but significantly different from curricula elsewhere.[18] These curricula are now examined for the two target populations in turn.

At Population A level, the Study found commonality in basic arithmetic, algebra, and measurement; and attention was paid by some systems to introductory statistics. However, geometry curricula were very varied, underlining the fact that junior cycle geometry teaching has been in disarray for some time. As regards algebra, participating systems form two "clusters," with systems in one cluster providing greater coverage of algebra (that is, rating more of the test items appropriate) than do those in the other.[19]

Ireland is in the "high algebra" cluster. This is slightly unusual for a system in which the Population A year is only the first of post-primary schooling. It may tend to suggest that the Irish curricula of the time moved rather quickly, by international standards, into comparatively abstract and symbolic mathematics. That perception is supported by a comparison of the geometry in the Irish Population A course — transformation geometry in the style of Papy, resting explicitly on an axiomatic basis — with that of other systems.[20]

At Population B level, the study found a somewhat less clearly defined "common core." It includes topics in algebra, sets and relations, elementary functions, and number systems. Probability and statistics, some combinatorics, and computer science were also featured in some systems. Geometry was again an area of international diversity, though most systems emphasised co-ordinate geometry and trigonometry. As regards calculus, historically a major goal for school mathematics in many systems, there was a rather sharp contrast between systems in the extent to which it was part of the curriculum. This provides the basis for forming curricular clusters. Thus, two main clusters are distinguished : one contains those systems with high coverage of calculus and allied topics, and the other contains those in which the coverage of calculus is lower or non-existent.[21]

Ireland is in the "lower calculus" cluster. This is not surprising, given the unspecialised nature of the Senior Cycle course. However, the identification is not as clearcut as might be expected: some analyses of the data place Ireland among "higher calculus" systems.[22] In view of the large proportion of students involved and the comparatively short time allocation to mathematics, this may suggest that (intended) coverage is actually rather ambitious.

What was found more surprising was the identification of a sub-cluster of systems — those of France, Belgium, Luxembourg and Ireland — curricula of which were clearly very affected by the Bourbakiste school of mathematics (the "new mathematics" that hit the headlines in the 1960s).[23] For the Curriculum Analysis Group in general, the surprising feature was that such a sub-cluster existed. For Ireland, however, the surprise lay in the fact that the sub-cluster was so small: Irish mathematics educators had tended to assume that the Bourbakiste type of curriculum was the international norm.[24] This finding was itself sufficient to justify Ireland's participation in the Curriculum Analysis.

It also helps to explain why Ireland did not, in the end, participate in the Student Attainment component of the Study. (The main reason was lack of resources — money and, for Population B, students' time — at the crucial period. A follow-up study has been carried out for Population A; data analysis is continuing). The items in the Population A student tests were not actually inappropriate for Ireland, in the sense that students had been exposed to the content of most of them. However, some of this content was not of great importance in the Irish curriculum, at least for the classes which would have been tested; and there were many important areas of the curriculum which the tests did not examine.

5. Student attainment : Ireland in international perspective.

While Irish student attainment results are not reported in SIMS, a picture of Irish attainment at a level roughly corresponding to that of the SIMS Population A is provided by the International Assessment of Educational Progress (IAEP).[25] In comparison with several other countries in the IAEP study, Ireland produced a rather low mean score. It is not significantly different from that returned by the United Kingdom and Spain, and exceeds that produced by the United States; but several Canadian provincial groups and — especially — the Korean population scored appreciably more highly.[26]

This finding needs to be set in context.

IAEP was a study of a different style from SIMS. SIMS opted to eschew total-score comparisons between countries; even within topic areas it emphasised within-system comparisons of intention and implementation, rather than between-system rank ordering of achievement results.[27] The Curriculum Analysis provided an account of the variety, in both context and content, that makes such between-system comparisons difficult to interpret.[28] IAEP, while adverting to the difficulty, nonetheless chose to present its results in the form of a "league table."[29] The two studies are therefore complementary. Occasional studies of the SIMS type — which are relatively time-consuming and cumbersome to carry out — can supply the background against which results from more frequent and quickly executed studies in the style of IAEP can be examined.

What, then, can the experience of SIMS tell us about the IAEP study? Perhaps even more than in the case of SIMS, the IAEP tests did not cover key aspects and distinctive features of the Irish curriculum.[30] Moreover, the tests were given, not to a grade cohort, but to an age cohort : the thirteen-year-olds.[31] This is natural in a study which aimed to maximise between-system comparability; but it increases the difficulty of relating national attainment scores to identifiable curricula or classroom activities, for two reasons. First, as already indicated, the thirteen-year-old age cohort in Ireland is scattered across several grades. Secondly, at the time at which testing took place, some of the students were following the old Intermediate courses, while others were following the new ones.

Thus, in terms of *achievement of the goals of the Irish curricula,* the case for or against Ireland perhaps remains "non proven." However, some very interesting questions can be addressed by detailed analysis of the data. For example, if Irish children actually performed badly (relative to those in other systems) on those test items which were very appropriate to the relevant Irish curricula, then there will be cause for concern.

This discussion can be carried further. The IAEP tests contain a considerable number of items associated with the Irish primary rather than the post-primary curriculum. Hence, it may be asked: was some of the poor performance by Irish students attributable to "rustiness?" A further question follows: if so, are the skills and concepts involved ones which Irish society wants its students to retain at all times — that is, does such rustiness constitute a serious problem — or are other skills and concepts more important?

Questions such as these are crucial when the results of SIMS and IAEP studies are applied to curriculum review. It is to that topic that discussion now turns.

6. Implications for curriculum review

In examining recent international developments in mathematics curricula, it is hard to identify what might be due to SIMS — in particular to the Curriculum Analysis — and what has evolved independently. Because of the protracted timescale of the Study and the availability of preliminary results (some of which have been known for as much as then years), there has been interaction between SIMS and other sources: hopefully, to the benefit of both the Study itself and mathematics education in general.[12]

In the case of Ireland, however, the scope of the Study's influence can perhaps be determined. revision of the Junior Cycle curricula was instituted in the early eighties, and culminated in the introduction of new courses in 1987; revision of the Senior Cycle courses is under way at present. The two levels are considered in turn.

The alterations in *Junior Cycle* curricula reflect three relevant (and related) points: a move away from the Bourbakiste influence identified above, a slowing down of the fast pace set in the curricula of the 1970s, and increased differentiation of provision in the early Junior Cycle years.[33] While none of these is directly attributable to SIMS — rather, they arose because of widespread dissatisfaction within the system regarding the then existing courses[34] — the results of SIMS are important nonetheless.

Broadly speaking, they support the changes. As outlined above, the indications were that the Irish curriculum covered too much, too soon; hopefully this has now been rectified. Moreover, the emphasis on "modern mathematics" was shown to be unusual. Modern mathematics did not find a natural home in the Irish culture, so its unsuccessful implementation (or rather its non-implementation) was almost guaranteed;[35, 36] Its scaling down appears sensible. The Curriculum Analysis revealed that such a procedure, in which quite radical curricula are introduced and then modified where necessary, is in line with what has happened elsewhere. Altogether, in fact, the review of the Junior Cycle courses was concerned primarily with *tidying up some unfinished business from the 1960s;* and the findings from SIMS suggest that appropriate action was taken in this respect.

The preliminary results of SIMS were communicated to various people involved in the curriculum review at Junior Cycle level. However, the Committee now reviewing the *Senior Cycle* courses has access to the final results. These appear to have two main messages; they are concerned respectively with context and with content.

As regards context, the unspecialised nature of the Senior Cycle curriculum means that students following the Leaving Certificate courses have limited time, compared with that available to their counterparts elsewhere, for the study of mathematics. There are bounds on what we should expect even the best of such students to cover. Indications from SIMS are that the (intended) curriculum at the Higher level has been quite extensive; so the declared ambition of several constituencies[37] to shorten it has research backing. Moreover, the high retention rate in Leaving Certificate mathematics courses may not be consistent with the use of both existing programmes (Higher and Ordinary Level) as courses of Population B type: that is, courses catering *inter alia* for students who will specialise in the mathematics/science area. Again, therefore, an existing lobby — this time for another Leaving Certificate course, of different type from the existing ones — can quote research in support of its demands.[38, 39]

This leads to a consideration of content. Because Population B is essentially concerned with courses for a mathematics/science "track," the Study does not provide models for the possible content of a more general mathematics course. The situation is otherwise for the existing Higher and Ordinary courses. These, it reveals, are broadly similar to programmes reported from elsewhere; the characteristics that place Ireland in the Bourbakiste cluster of countries are less pervasive — and less controversial — at this level than in the former Junior Cycle courses.

Such changes as are introduced in the current revision, therefore, perhaps should have to do *not so much with finishing an agenda from the sixties as with introducing one for the nineties.* In the Curriculum Analysis report, it is pointed out that topics such as probability, statistics and discrete mathematics may be more relevant to students in the nineties than are (say) aspects of the calculus; so also may greater use of calculators and computers.[40] If this is true, there are clear implications for the revision procedure. The existing courses may need, not just to be tidied up, but rather to be redesigned, with rigorous scrutiny of the value for students (as well as acceptability by teachers and others) of the various topics which they might contain.

Ideas such as these may help the current Senior Cycle Mathematics Course Committee as it sets about the task of producing courses that are suitable — teachable, learnable, and applicable — for the students of the 1990s.

Conclusion

This paper has considered developments in second level mathematics curricula in Ireland against the backdrop provided by international studies, particularly the Second International Mathematics Study.

Such studies have strengths and weakness. In this paper, the emphasis has been on the strong points: on what the studies can tell us about our mathematics education. There are issues amenable to such an approach; there are others for which alternative sources would be more helpful; and there are yet others which studies such as SIMS cannot even begin to address.[41] Moreover, even where they are most relevant, the studies cannot prescribe; they can only suggest. Attempts to use them inappropriately could well be counterproductive.

However, SIMS has cast considerable light on where we now stand as regards mathematics curriculum and on how we arrived there. Perhaps it has also helped to show directions in which we might advance, if we so wish. It is up to ourselves to make the decisions.

APPENDIX :

THE SECOND INTERNATIONAL MATHEMATICS STUDY

Scope

The Second International Mathematics Study (SIMS) is a cross-national investigation of *mathematics curricula, classroom practice,* and *student achievement and attitudes,* chiefly in second level education.

This paper discusses one component of the Study, the "Curriculum Analysis"

Participants

Twenty five education systems were associated with the Study; they were:

Australia
Belgium (Flemish)
Belgium (French)
Canada (British Columbia)
Canada (Ontario)
Chile
Dominican Republic
England and Wales
Finland
France
Hong Kong
Hungary
Irish Republic
Israel
Ivory Coast
Japan
Luxembourg
Netherlands
New Zealand
Nigeria
Scotland
Swaziland
Sweden
Thailand
USA

(Some of these systems were minimally involved and are not represented in the international reports).

Populations

Two target populations were singled out, the full definitions being as follows:

1. Population A:
   All students in the grade in which the modal number of students has attained the age of 13.0 - 13.11 years by the middle of the year.

2. Population B:
   All students who are in the normally accepted terminal grade of the [sic] secondary education system, and who are studying mathematics as a substantial part (approximately five hours per week) of their academic programme.

Content-behaviours Grids

Two content-behaviours grids, used as the basis for data collection for many aspects of the Study, covered the following topic areas:

1. Population A:
   Arithmetic (nine topics); algebra (twelve topics); geometry (fifteen topics); statistics (nine topics); and measurement (four topics).

2. Population B:
   Sets and relations (five topics); number systems (five topics); algebra (seven topics); geometry (nine topics); elementary functions and calculus (ten topics); probability and statistics (five topics); finite mathematics (one topic); computer science (one topic); and logic (one topic).

Curriculum Context

The contexts in which the various curricula are embedded vary considerably from one system to another. The study revealed both commonality and diversity in the content of mathematics curricula.

1. Population A.
   There is a common core consisting of arithmetic and measurement; coverage of algebra and statistics varies, as does the approach to geometry. Systems could be seen as forming two clusters:
   - "High algebra cluster:" Ireland, New Zealand, Belgium (French), Belgium (Flemish), Japan, Hungary, Scotland, France, England and Wales, Canada (British Columbia) and the Netherlands;
   - "Low algebra cluster:" Swaziland, Finland, Hong Kong, Luxembourg, Sweden, Thailand, Israel, Canada (Ontario), and the USA.

2. Population B:
   There is a common core consisting of topics in algebra, sets and relations, elementary functions, and number systems. Other topics are important in some systems. Coverage of calculus is particularly variable. This is the basis on which two clusters are identified:
   - "High elementary functions and calculus cluster:" New Zealand, England and Wales, Hong Kong, Israel, Japan, Belgium (Flemish), Belgium (French), Finland, Hungary, and the USA.
   - "Low elementary functions and calculus cluster:" France, Ireland, Luxembourg, Scotland, Sweden, Canada (Ontario), Thailand, Canada (British Columbia).

(Systems omitted from the above lists did not take part in the relevant sections of the Curriculum Analysis).

In addition, the Study revealed a sub-cluster of "Bourbakiste" systems — France, Belgium (Flemish), Belgium (French), Luxembourg and Ireland — particularly affected by the so-called new mathematics introduced in the 1960s.

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4. Archie E. Lapointe, Nancy A. Mead, and Gary W. Phillips, *A World of Differences : an International Assessment of Mathematics and Science* (Princeton : Educational Testing Service, January, 1989).

5. Travers and Westbury, *Analysis of Mathematics Curricula,* pp.1-14. see also the Appendix to this paper.

6. The author's perception of the Curriculum Analysis has been recorded in Elizabeth Oldham, "Is There an International Mathematics Curriculum?" in *New Directions in Mathematics Education,* eds. Brian Greer and Gerry Mulhern (London : Routledge, 1989). The account is intended to complement the international report. It refers especially to the United Kingdom and the Republic of Ireland.

7. See Appendix.

8. Travers and Westbury, *Analysis of Mathematics Curricula*, pp.15-53, 79-82, and 111-112.

9. Ibid., passim, especially p.p.76, 78.

10. Oldham, "Is There an International Mathematics Curriculum?" p.213.

11. Travers and Westbury, *Analysis of Mathematics Curricula*, p.57-59.

12. Ibid., pp.63-67.

13. Ibid., pp.62-63.

14. Oldham, "Is There an International Mathematics Curriculum?" p.198.

15. Travers and Westbury, *Analysis of Mathematics Curricula*, pp.65-66 and 70-71.

16. Ibid., pp.71-78.

17. F. van der Blij, S. Hilding and A.I. Weinzweig, "A Synthesis of National Reports on Changes in Curricula," in *Comparative Studies of Mathematics Curricula*, ed. Steiner, pp.37-54.

18. See Appendix.

19. Travers and Westbury, *Analysis of Mathematics Curricula*, pp.83-86 and 93-95.

20. Ibid., pp.90-91.

21. Ibid., pp.95-98 and 108-109.

22. Oldham, "Is There an International Mathematics Curriculum?" p.212.

23. Travers and Westbury, *Analysis of Mathematics Curricula*, pp.95, 110.

24. Personal communications from colleagues, especially in the Irish Mathematics Teachers' Association.

25. Michael O. Martin and Thomas Kelleghan, "IAEP '88 — The Results from the Republic of Ireland," paper presented at the AERA Conference, San Francisco, Spring, 1989.

26. Lapointe et al., *A World of Differences*, pp.13-14.

27. Robitaille and Garden, *Contexts and Outcomes of School Mathematics*, pp.97, 102-120, 126-143.

28. Travers and Westbury, *Analysis of Mathematics Curricula*, pp.303-323.

29. Lapointe et al., *A World of Differences*, pp.7-9.

30. Interview and discussions with Michael O. Martin, Educational Research Centre, St. Patrick's College, Drumcondra, Summer and Autumn, 1989.

31. Lapointe et al., *A World of Differences*, p.8.

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33. The former and present courses (as of 1990) are to be found in Department of Education, *Rules and Programme for Secondary Schools 1987/88 and 1988/89* (Dublin : Stationery Office, 1988), pp.39-64.

34. Personal communications from colleagues, especially in the Irish Mathematics Teachers' Association and the Royal Irish Academy National Sub-Commission for Mathematical Instruction.

35. The shortfall in implementation, particularly as regards modern algebra, was reported by the author in : Oldham, "Case Studies in Algebra Education; Ireland," pp.413-414. The paper also adverted to the fact that parts of the new curricula were imported from overseas (after considerable "shopping around") (pp.403-404), and that some of the imported material found little support among Irish university mathematicians (pp.416-420). The importation of alien curricula was identified by Westbury as a notable weak link in the procedure; see Ian

Westbury, "Conclusion," in *Comparative Studies of Mathematics Curricula*, ed. Steiner, pp.512-514.

36. "Mismatches between the ... cultural backgrounds of the donor and the recipient can prove disastrous" (A. Geoffrey Howson, Christine Keitel and Jeremy Kilpatrick, *Curriculum Development in Mathematics* (Cambridge : Cambridge University Press, 1981, p.243).

37. Personal communications from colleagues, especially in the Irish Mathematics Teachers' Association, the Royal Irish Academy National Sub-Commission for Mathematical Instruction, teacher unions and managerial bodies. (Documentation is forthcoming in the context of the Senior Cycle curriculum review).

38. Personal communications from colleagues, especially in the Irish Mathematics Teachers' Association, unions and managerial bodies. (Documentation is forthcoming in the context of the Senior Cycle curriculum review).

39. Travers and Westbury, *Analysis of Mathematics Curricula*, pp.218-221.

40. Ibid., p.222.

41. Difficulties with and challenges posed by such studies are well documented in Ian Westbury, Hrolfur Kjartansson and Kenneth J. Travers, eds., *Issues in the interpretation and Use of Cross-Cultural Achievement Data within National Education Systems : a Source Book of Commentaries and Models* (Champaign-Urbana : College of Education, University of Illinois at Urbana-Champaign, April, 1981).

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THE EDUCATIONAL DIMENSION OF VOCATIONAL REHABILITATION

Peter Davies

Introduction

This paper examines the educational needs of 200 disabled persons referred for vocational training to the Rehabilitation Institute's National Training College in Dublin. Part 1 discusses the background group, and examines the background issues and the assessment methods used. Part 2 analyses the population's characteristics and needs, describes the services provided and examines the outcome of this provision.

1. Background

The International Classification of Impairments, Disabilities and Handicaps (1980) provides a model of the handicapping process which enables us to view the major focus of vocational rehabilitation, for the individual, as being to minimise the handicapping effects of the disability. The activity is geared to achieving a transition from a relatively dependent, disability focused, relationship with society to a relatively independent, ability focused, relationship. Transition is achieved through the acquisition of a range of knowledge and skills, primarily technical and job centred, but encompassing work-related educational and social dimensions. The rapid pace of change in commercial and industrial activities, and in particular the introduction and growth of new technology has demanded that people seeking employment have a broadly based preparation for work, where skills acquisition is integrated with education and personal development. Vocational rehabilitation and training must promote flexibility through these means, thereby encouraging independent, and widening vocational choice (Flannery, 1984).

Entry to vocational training courses for disabled people, just as for the able bodied, depends upon the person's perceived ability to benefit from the service, and "ability to benefit" is frequently measured in terms of (among others) level of educational attainment. Poor educational attainment thus aggravates the handicapped person's disadvantages, making it more difficult for him to gain entry to and succeed in vocational training services, and less likely to return to employment. (Training and Employing the Handicapped (1975). The importance of education as a factor in return to work has been reported by a number of authors. Wright (1980) has asserted that:-

> Education is fundamental to the concept of complete rehabilitation ...(which) should result in permanent vocational adjustment, a career rather than a job for the moment... Educational programs can also contribute to clients achieving personal adjustment to disability.

MacKenzie et al (1987) found education, with income and social support, as the most important factors, apart from severity of injury and body region involved, contributing to return to work among persons hospitalised for traumatic injury. With spinal cord injured populations a number of authors have found pre-injury educational level, or further educational development post-injury, to be significant factors in return to employment. (Goldberg and Freed1973 and 1982; El Ghatit and Hanson, 1979; Alfred et al 1987). Natvig (1983) found inadequate education to have militated against successful re-employment of laryngectomees and similar results have been found with head injured subjects. (Dresser 1973, Bolger 1983).

In Ireland a survey of members of the Irish Wheelchair Association carried out between 1974 and 1976 showed a substantial level of poor education. Primary education only had been achieved by 11.3% of 15-18 year olds, 34.3% of 19-25 year olds and 37.3% of 26-35 year olds. (Faughnan, 1979). The Irish Industrial Training Authority, AnCO, carried out a survey in 1978 revealing substantial literacy problems with 14.7% of their disabled trainees, as well as difficulties with concentration, communication and comprehension. (AnCO 1978). Within the Rehabilitation Institute's general services, the provision of remedial education services had long been seen as important.

Founded in 1949, the Rehabilitation Institute is an independent voluntary organisation which aims, through the provision of a range of vocational rehabilitation and work related services for handicapped persons to enhance their prospects of achieving social and economic independence in the community. It provides training in some 35 community workshops throughout the Republic of Ireland. Its National Training College opened in Dublin in 1983. It provides training in a range of areas: including business and clerical jobs, computer programming, graphic design, draughting (including CAD), electronics; in engineering, cabinet making and similar trades; and as chefs in hotels and restaurants. The college operates a continuous entry system to all its courses. This means that each trainee is on an individualised course, and can progress at his own speed, dealing with any particular difficulties which arise in a way which suits his or her specific needs. The vocational assessment unit in the college developed a criterion-referenced methodology which allowed difficulties to be identified at an early stage. It soon confirmed that educational deficits were hampering trainees' progress. A department within the college provides educational foundation courses for those requiring them. These courses are the subject of the second part of this paper.

The college's vocational assessment aims to enable clients to take account of their individual requirements, interests, weaknesses and strengths in relation to currently available opportunities when constructing realistic and viable vocational plans. It uses a three-phase assessment process, a detailed description of which is available elsewhere. (Davies, 1985). It is sufficient here to explain that the first stage (Stage 1) uses educational achievement tests of mathematical skill and English comprehension, criterion-referenced to the requirements of the various courses on offer, together with tests of non-verbal logical reasoning and verbal ability. A vocational interest inventory and personal vocational preference listing, complete the initial assessment. Stage 11 checks performance on, and identifies any special needs in relation to, the technical and social aspects of the vocational rehabilitation process — adaptations, transport, psychosocial needs, for example. Stage 111 is a confirmatory assessment over the first 3 to 6 weeks in the college, following which a detailed individual rehabilitation plan is finalised.

The stage 1 assessment is the major identifier of educational needs. Its report shows what percentage of the maths requirement of each course the person has mastered, which specific items are problematic, and what level of the English comprehension requirement of each course is achieved.

2. Population needs and expenses

The College provides services to people with disabilities, ranging in age from 16 years up. The average age is about 23 years. In terms of disability, the population is mixed, with the general distribution as follows:

TABLE 1 — Population by disability

Physical acquired	25%
Physical congenital/childhood	25%
Hearing impaired/deaf	15%
Visually impaired/blind	5%
Psychiatric/psychological	25%
Other	5%

In terms of their educational background, the prior level of attainment is also variable:

TABLE 2 — Population by educational level

Primary education only	9%
Intermediate Certificate	35%
Leaving Certificate	40%
Third Level qualifications	7%
Other (mainly GCE)	9%

The majority of those with third level qualifications have psychological or psychiatric difficulties, and we expect that all of those with sensorial disabilities have some level of certification. It should also be remembered that these are prior attainments and, therefore, do not necessarily reflect current functioning.

Analysis of the assessment results of a random sample of people referred to the College showed that of the 157 people who ultimately entered, 48 (30.6%) required Foundation.

Those requiring Foundation had the following educational background:

TABLE 3 — Requirement for Foundation Course by educational level

Count	Primary	I.C.	L.C.	3rd Level	D.K.	Row Total
Foundation not required	6	30	54	7	12	109
Foundation required	2	23	16	1	6	48
	4.2%	47.9%	33.3%	2.1%		30.6%
	25.0%	43.4%	22.9%	12.5%		
Column Total	8 5.1%	53 33.8%	70 44.6%	8 5.1%	18 11.5%	157 100.0%

These needs of 43.4% of those with Intermediate Certificate for Foundation is a reflection of the entry level of courses. Of particular interest are the 16 people (22.9%) of those with the Leaving Certificate who required Foundation. Six of these had sensorial deficits, predominantly hearing impairment, which led to language comprehension needs. Five had psychiatric disabilities, where the need for educational and social reactivation would be an issue. This pattern is reflected in the distribution by disability of those requiring Foundation.

TABLE 4 — Requirement for Foundation Course by disability category count

	Phys.A	Phys.C	Sensorial	Em.. Beh.P.	Other	Row Total
Foundation not required	37	20	23	26	3	109 69.4%
Foundation required	7	8	18	10	5	48
Column Total	44 28.0%	28 17.8%	41 26.1%	36 22.9%	8 5.1%	157 100.0%

It is not surprising that 5 of the 8 persons with learning difficulties required Foundation. The 3 who did not chose craft courses for which they had adequate educational levels.

There was a significant relationship (p. 0001) between choice of course and need for Foundation. Not surprisingly most people chose courses for which they did not require a Foundation. Two of the 48 completed assessment but were referred on for further assessment. One of these had an acquired physical disability and one a psychiatric disability.

TABLE 5 — Requirement for Foundation Course by Course chosen

	BS/C	Draught Graphics	Sec.	Elec.	Craft	Further Assess.	Row Total
Foundation not required	52	22	21	10	4	0	109 69.4%
Foundation required	5	9	15	1	16	2	48 30.6%

While it might be expected that those requiring Foundation would tend to be the older trainees, their mean age was practically the same (22.9 years) as that of the total population (23.2 years). Thus, those requiring Foundation courses are predominantly those with Intermediate Certificate level of education. Those with acquired physical disabilities have the lowest need for Foundation (15.9%), but it is still substantial.

The response of the college to the needs of all who require compensatory measures is individualised and multifaceted. Because individual needs can be identified, programmes can be designed to meet each individual's particular circumstances. The educational needs of trainees are met by their participating in a Foundation course prior to embarking on a technical skills training course. The college offers two Foundation courses: One caters for six trainees who take approximately six months to work on English, Maths and their general education; the other caters for twelve trainees who work for three to four months on English and Maths needs specific to their chosen vocational courses. Trainees are placed in one of the two courses according to the level of their needs, and a few trainees will avail of both. While the atmosphere and intensity of the two courses varies, the overall objectives of both are the same, i.e.

- to provide trainees with the educational skills and competencies required for their course;
- to enable trainees to develop an appropriate and effective learning style;
- to facilitate the transition of the individual from their previous activity (e.g. unemployment, hospital, school) into the College.

Each trainee is given starting points for the various strands of his programme. As work progresses the trainee is offered choices — of materials, topics, directions — for the subsequent steps. In this way the programme, always bears in mind the goal of achieving the educational requirements of the chosen course. Indeed each must eventually complete a terminal test to demonstrate mastery in the areas required for the target course. Sometimes it is necessary to use smaller intermediate tests to demonstrate to the trainee that he has mastered an area.

People moving into a new learning situation, whether they have come from a school, from a hospital, from unemployment, must develop a learning style appropriate to their needs and situation. They require —

> "Strategies to solve problems, manage information, monitor the state of their own knowledge and skill, and transfer learning into new contexts," (Flannery, 1984).

Individuals need to find ways to learn, that work best for them. This may include resolving issues of concentration span, pace of work, or need for repetition, to develop practical study techniques. It also includes a validation of previous experiences having relevance in the present situation, and an understanding that making mistakes is all right in a learning situation provided they are learned from.

The facilitation of the transition from home, hospital or school into the College is an important part of the rehabilitation process. Apart from the routine life-organisation issues such as arriving on time, focusing on the job in hand, or managing accommodation, the growth of confidence, belief in ability and the anticipation of success are vital components. Much of this set of needs is dealt with within the teaching/learning activity, but clearly some needs for some trainees require the involvement of counsellors, psychologists and other specialists in the field, and these are available in the college.

The process of adjustment to the college also provides valuable experience for the individual on handling change. Sensitive feedback of difficulties perceived by staff can be very useful in terms of negotiating the agenda of issues which need to be worked on in the context of the individual's rehabilitation programme so that the next move, that is, full return to working life, can be achieved smoothly and successfully.

Instructors have observed that trainees who require Foundation courses almost always see themselves as being less able and less successful than those who do not. Thus they start their College career with a deficit in confidence. This deficit is addressed throughout the Foundation Course. Regular consultations between instructor and trainee concentrate on progress and on successes, however small. Trainees are given the responsibility of developing and overseeing their own programmes, including marking their own work, and of initiating new tasks. They are also encouraged to help, even teach, other trainees on the course. Apart from the individual programmes, trainees participate in group discussions and group projects, gaining respect for one another and for themselves.

During the 3 years September 1984 - August 1987, 101 trainees were admitted to the Foundation courses in the College. (While some of these are included in the sample discussed in the first part of the paper, they are not the same population).

TABLE 6 — Trainees leaving Foundation Courses 9/1984 — 8/1987

Outcome	N	%
Completed/to courses	80	79.2
Other Rehab Centres	8	7.9
Employment	3	3.0
Marriage	1	0.9
Other (medical)	9	9.0
Total		100.0

Trainees moving to other Rehab centres cannot be regarded as having reached their full potential, and their ultimate success in reintegrating has not been investigated.

The 80 who continued went to courses as follows:-

TABLE 7— Destination of Trainees Completing Foundation

Course	N	%
Business/Computers	13	16.25
Secretarial	32	40.00
Draughting/Graphics	14	17.50
Electronics	10	12.50
Craft Courses	11	13.75
Total	80	100.00

To 31st May 1988, 59 of these trainees had left the college, the remaining 21 have yet to complete their courses.

TABLE 8 — Destination of Post Foundation Trainees Completing Courses

Course	Did Not Complete	Training Elsewhere	Completed	Placed
Business/Computers	—	2	8	7
Secretarial	5	1	16	12
Draughting/Graphics	5	1	8	7
Electronics	3	1	4	3
Craft Courses	—	2	3	3
Total	13	7	39	32

Thus 66% completed their course, and 82% of them were placed. Disregarding those who went to further training, 61.5% of all discharges entered or re-entered the labour force. This compared with general outcomes in the college of 80% completion and 85% placement. Thus, while the completion rate is somewhat lower than the general rate for the college, the placement rate compares very favourably.

Summary

The assessment process used has demonstrated and this analysis has confirmed the existence of substantial educational needs among this heterogenous population of disabled people. They are not needs in a purely theoretical sense, but exist in the context of the specific knowledge and skills required by a person to enter (successfully) vocational rehabilitation training programmes offered in the National Training College. The direct linkage of this educational dimension to the further vocational training and ultimate re-integration into the workforce of disabled people ensures its relevance, while the numbers placed confirm its value.

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THE TEACHING OF SENIOR-CYCLE RELIGION: AN IRISH PERSPECTIVE

Geraldine Bourke

This paper examines the teaching of religion, at senior-cycle level, in Catholic voluntary secondary schools in Ireland. I aim to show (a) that the theory underpinning the teaching of senior-cycle religion betrays a lack of conceptual clarity in its failure to distinguish clearly between the Catholic school's dual goals of education and faith-nurture, (b) that catechesis rather than religious education is the dominant model in the teaching of senior-cycle religion in Catholic secondary schools in Ireland, (c) that the preconditions of catechesis do not exist in a "zone of obligatory attendance"[1] such as the classroom, and (d) that religious education, as well as being the only legitimate approach in a compulsory setting, is also a necessity, given the particular context of the Catholic school.

Definition of Terms

While it is outside the remit of the present discussion to provide a detailed analysis of the logical distinction between religious education and catechesis, it is necessary, in the interests of clarity, to define briefly the terms "religious education" and catechesis" and to outline the essential differences between the two activities. For the purposes of this paper, I take "religious education" to mean, in the context of senior-cycle schooling, the development of pupils' capacity for critical thinking in the area of religion. This development of pupils' capacity to think critically may, arguably, be best achieved by adopting the concept of education proposed by R.S. Peters, which may be briefly described as the intentional transmission of that which is considered worthwhile, involving increased knowledge, understanding, and cognitive perspective.[2] According to Peter's former colleague, Paul Hirst, the knowledge transmitted in education must be accompanied by appropriate evidence if such knowledge is to receive the universal acceptance[3] which is necessary in a public activity such as education.

Catechesis or faith-nurture, on the other hand, may best be understood in terms of socialisation, i.e. that form of education which entails the initiation of the young into the knowledge, beliefs, and attitudes of the community. An essential feature of this view of education is that, unlike education understood as the development of critical thinking, the knowledge transmitted to succeeding generations is not dependent on objective proof but is passed on simply because the community believes it to be true.[4] Although catechesis, in common with religious education, entails increased knowledge and understanding of the Christian faith, its primary aim is a deepening of the believer's faith in Jesus Christ[5] rather than the development of the mind in the area of religion. Therefore, as a consequence of this faith-nurturing aim of catechesis, one has to assume the prior existence of faith in those participating in catechetical activities. In addition, the believer's participation in catechetical activities must be voluntary. The fact that religious adherence, in the Christian tradition, is essentially a loving relationship with Jesus Christ rules out any question of compulsion. This is because genuine love is always volitional and must, therefore, be based on a free decision. Now, just as one must be allowed complete freedom in making one's original decision for or against religious belief,[6] so too the decision to deepen and to strengthen one's faith through catechesis must be the result of a free choice.

The essential difference between religious education and catechesis hinges on the different stances required towards what is essentially the same subject matter, i.e. religious knowledge. This stance will be one of reason in religious education and of faith in catechesis.[7] Lest the erroneous impression be created, through this contrast of faith and reason, that religious belief is an irrational act, it should be pointed out that the term "reason" has come to be identified, in the public domain of education, with the notion of appropriate evidence.[8] As a consequence of this identification of reason with objectively verifiable evidence, faith becomes belief in something without universally compelling proof.

Now, because education is a public activity, its content is bound by the necessity of offering appropriate reasons or evidence.[9] The consequences of this are that the claims of Christianity cannot be presented as incontrovertible in an educational setting as the necessary evidential support cannot be supplied.[10] In religious education, one can aim to provide knowledge and understanding of what adherents of a particular faith believe, given the basic assumptions underlying their beliefs. Whether this belief system is true or not, however, is a matter for the pupil to decide as the acceptance of a religious outlook necessarily entails going beyond the available historical and scientific evidence and requires the pupil to make an act of faith on the matter. In catechesis, on the other hand, one approaches the same content, i.e. religious knowledge, from a stance of faith. Those taking part in the activity have already accepted the claims of Christianity as true, without being in a position to provide absolute proof in support of their beliefs.

Lack of Clarity in Theory

From what has been said so far, it is clear that religious education and catechesis are logically distinct activities. Yet, when we come to examine the theory underlying the teaching of religion in Catholic secondary schools, we find that the basic document for the guidance of teachers of religion, namely, the *Syllabus for the Religious Education of Catholic Pupils in Post-Primary Schools* (1982), fails to distinguish clearly between the school's educational role in the area of religion and its faith-nurturing goals — a failure which has, arguably, contributed to many of the problems currently affecting the teaching of senior-cycle religion.[11] The seeds of confusion are sown in the opening lines of the Syllabus where the terms "catechesis" and "religious education" are used synonymously: "One of the main means of evangelism is catechesis or religious education."[12] Now, as we have already seen, the terms "religious education" and "catechesis" are not co-extensive even though there are points of convergence between them. To use these terms interchangeably is bound to confuse teachers about the precise nature of their classroom role. According to the Syllabus, the aim of religious education is overtly catechetical rather than the development of the pupils' ability to understand and use religious concepts: "The general aim of religious education is to awaken people to faith and then to help them throughout their lives, to deepen and strengthen that faith."[13] The suspicion that education in the area of religion is being subsumed under the more dominant concept of catechesis is reinforced by the great preponderance in the Syllabus of catechetical as opposed to cognitive curriculum goals[14] and by the document's stress on the necessity of Christian witness in spreading the faith: "It is the whole Christian people which teaches religion, teaches it by the way it lives more than by the way it lectures."[15] The intellectual development of pupils — an area in which the school has particular expertise — receives far less emphasis than catechesis. Although the Syllabus acknowledges that religion should be taught in accordance with educational principles,[16] nowhere does it explain how such principles are to be reconciled with the heavy emphasis on faith-nurture which is such a feature of the document. This preponderance of ecclesiastical rather than educational language in a syllabus aimed specifically at teachers in a formal classroom setting does little to help the individual teacher to form a clear concept of his/her precise role in the classroom. Now, a policy of catechesis certainly has relevance to the Catholic school's role as a socialising agency. The problem is, however, that sufficient cognisance has not been taken of what might be considered to be the school's fundamental task of education.

The 1982 Syllabus makes frequent reference to various Church documents[17] in support of its position on religious education. Yet, the main preoccupation of all these documents is with catechesis or faith-nurture and not with education as the development of critical thinking. For example, the authors of *The Catholic School* appear to understand school-based religious education in terms of catechesis when they write:

> "The fundamental difference between religious and other forms of education is that its aim is not simply intellectual assent to religious truths but also a total commitment of one's whole being to the person of Christ."[18]

The authors of this document do not appear to see any logical difference between the concepts of religious education and catechesis, for if they did, they would have to accept the possibility of a person being educated in the area of religion whether she/he had faith or not. As a result of this type of conceptual confusion, teachers are often distracted from achieving attainable educational goals in their pursuit of catechetical aims which might be more appropriately and successfully pursued somewhere other than in the classroom.

Catechesis the Dominant Model

Given this tendency in Church documents to conflate religious education and catechesis, it is not surprising to discover that the majority of Irish teachers of religion also operate on the basis of a catechetical model. According to a recent survey by Bates, 68.74 per cent of teachers of religion see themselves as working on the basis of either a "catechist" or "evangelist" model with only 7.14 per cent subscribing to a traditional or knowledge-centred approach.[19] This finding supports the view that catechesis rather than religious education is the dominant approach in the teaching of senior-cycle religion in Ireland. A further indication that the teaching of religion in Catholic schools has traditionally been regarded as a catechetical rather than as an educational activity is the fact that it is the Irish Conference of Bishops rather than the Department of Education which has ultimate responsibility and authority in virtually all matters pertaining to the religious education of Catholics in Irish Post-Primary schools.

Preconditions of Catechesis not present in Classroom

Having supported the view that catechesis is the dominant model in the teaching of senior-cycle religion, it is pertinent to ask whether the logical conditions of catechesis actually exist in a compulsory classroom situation.

Now, because catechesis aims to bring the believer to maturity of faith, one has to assume the prior existence of faith in those being catechised. There is, however, ample evidence to suggest that such an assumption cannot be made in the case of all senior-cycle pupils for whom attendance at religion class is obligatory. For example, a study by Breslin and Weafer found that 40.7 per cent of respondents were unsure about the existence of God and 2.5 per cent actually disbelieved in it. Only 56.8 per cent positively believed in God's existence.[20] Similarly, a survey carried out by the Irish Inter-Church Meeting (1988) showed that 27.5 per cent of the young Catholics surveyed had problems in the area of religious belief.[21] Both these surveys confirm the view that the average senior-cycle religion class is not made up of a homogeneous group of believers, but instead, that it contains, in addition to a very small group of unbelievers, a sizeable minority of pupils who are experiencing doubt and uncertainty where belief in the central tenets of Christianity are concerned. This implies that catechesis is not an appropriate model for the teaching of senior-cycle religion in Irish secondary schools because, for all practical purposes, one cannot assume that every pupil is either a believing or a voluntary participant given the compulsory nature of the classroom situation. It would thus seem that the current practice of catechesis in the classroom is being carried out despite the fact that the preconditions of catechesis are not present in such a setting.

Religious Education the Only Legitimate Approach

Given that it is not logically consistent with the status of catechesis to conduct it in a "zone of obligatory attendance"[22] such as the classroom, religious education remains the only legitimate approach to the teaching of religion in a compulsory setting. Because religious education is part of education as a whole, and because the knowledge transmitted in education is bound by the requirement of appropriate evidence, "intellectual and behavioural acceptance"[23] is demanded of the pupil. This means that she/he is logically compelled to accept the truth of what is taught in religious education as such knowledge will be accompanied by the necessary evidential support. In practice, this means that an objective and factual presentation of the subject matter, i.e. that Christians believe in the Resurrection, is not open to dispute by pupils. However, due to the controvertible status of religious claims to truth, the acceptance or rejection of these claims must be left to the pupils' free decision. Because a faith response is not demanded of pupils, religious education is possible, logically speaking, for all pupils whether they are believers or not and compulsory attendance at religious education classes can be defended on the same grounds as one would defend compulsory attendance at any other subject in the curriculum, i.e. English, History, Maths, etc.

Necessity of Religious Education

Not alone is religious education the only legitimate approach to the teaching of religion in the compulsory setting, but it is also an absolute necessity given the particular context of the Catholic school. First and foremost, the Catholic school has a mandate to educate by virtue of its being a school just like any other school — a fact which the Vatican II document on Christian education, *Gravissimum Educationis*, freely acknowledges: "Catholic school pursues cultural goals and the natural development of youth to the same degree as any other school."[24] This mandate to educate applies in the area of religion as well as in any other area of knowledge. Indeed, the development of human understanding in the area of religion, which religious education entails, could be described as worthwhile in itself and, as such, in no further need of justification.[25]

Secondly, religious education may be considered a precondition of catechesis and, therefore, essential if the Catholic school's faith-nurturing goals are to be achieved. Because religious education enhances the pupil's freedom by developing his/her ability to assess critically the claims of Christianity which the school promotes, it thereby ensures that any religious commitment made by the pupil is based on tested reasons and on the free decision which is a necessary element in any genuine assent to faith.[26]

Thirdly, religious education is especially necessary in the context of the Catholic school if such a school wishes to avoid possible charges of indoctrination.[27] Without the concurrent development of the pupil's capacity to assess critically the beliefs and values which are being promoted by the school, it could be argued that the Catholic school's policy of faith-nurture is potentially indoctrinatory. Should indoctrination, in fact, occur, the school's catechetical goals would be frustrated as the necessary element of pupil freedom would be missing. To put it another way, indoctrination as a means of catechesis is a self-contradictory notion and the provision of religious education is the most effective means of preventing such indoctrination from occurring.

Fourthly, it is particularly important, from the perspective of faith-nurture, to ensure that religion is not left behind in the general trend towards higher educational standards prevalent to-day. If a pupil's thinking in the area of religion does not keep pace with his/her thinking in other areas of knowledge, there is a danger that religion will be misunderstood and, as a result, be rejected by pupils as infantile and unworthy of their consideration. Now, there is evidence to suggest that the intellectual development of the pupil in the area of religion is being neglected and it could be argued that this failure to provide adequate intellectual support for belief may be a contributory factor in the gradual erosion of faith among the young. For example, a study by Bernadette McMahon of young people at the age of fifteen and again at seventeen years showed that the intellectual development of these students had remained static (or had even regressed slightly) where knowledge and understanding of the Catholic faith were concerned.[28] Similarly, a study by Breslin and Weafer may suggest that at least some of the confusion and doubt expressed by young people in the area of religion could be attributed to problems in the cognitive area. As an instance of this, only 56.8 per cent of respondents believed in the existence of God, whereas 65 per cent said that they believed that Christ was God.[29] Such inconsistency may be due to an inability to think in religious concepts which, in turn, would support the view that there is need for greater emphasis on the cognitive domain at senior-cycle level. As belief is dependent on knowledge, it could be argued that unless pupils possess sufficient knowledge and understanding of Christian beliefs, doubt and confusion are liable to set in. In other words, it is possible that the present practice of catechesis in the classroom with, arguably, a less rigorous and more personalist approach, may be inadvertently contributing to the current erosion of belief among young people by its failure to provide adequate intellectual support for belief. In fact, it could even be argued that religious education, viewed primarily as cognitive development, is a necessity for reasons internal to Christianity itself.

The importance of cognitive development in coming to a proper understanding of the Christian faith is perceptively explored by A. Roger Gobbel in a paper entitled "Christian Education with Adolescents : An Invitation to Thinking." According to Gobbel, any religion is grounded in "a particular way of structuring experience as a whole,"[30] rather than in a given set of doctrines and this structuring of experience is a cognitive task. Gobbel believes that to know what a doctrine says is insufficient. It is necessary to be grounded in the thinking which underlies the doctrine. In Gobbel's view, the Sacred Scriptures and the major doctrinal formulations of the Christian faith arose out of formal operational or abstract thought rather than out of concrete operational thought,[31] which he believes leads to literalism and fundamentalism in religious matters. It is Gobbel's contention that some capacity for formal operational thought is necessary in order to deal adequately with much of the doctrinal content of Christianity and with the thinking of the Christian community. It is, therefore, incumbent on the Christian community to initiate its members into this mode of thought. While formal operational thought emerges during adolescence, Gobbel states that its emergence is neither automatic nor universal. Because of this, formal operational thought in the area of religion needs to be deliberately cultivated in a systematic manner.

If Gobbel is correct, and I believe that he is, then a religious education which would develop the pupils' capacity for abstract religious thought, is a necessity from within the perspective of Christianity itself. This is because a sophisticated and mature understanding of the Christian faith demands the ability to think about it in abstract terms.[32] This stress on the cognitive in no way denies the importance of the affective in religious matters but, even here, it is possible to trace the origin of a particular emotion to the thoughts which consciously or unconsciously underlie it,[33] thus reiterating the importance of the cognitive in the area of religion.

Yet, it should not be assumed from what has already been said that religious education is a necessity for believers only. It is equally important that unbelieving pupils should develop the capacity to think rationally in the area of religion. Without the ability to assess critically the claims to truth of competing religions, such pupils may fall prey to unscrupulous groups masquerading under the name of religion and suffer lasting psychological damage as a result.

Conclusion

In conclusion, I would sum up present practice in the teaching of senior-cycle religion by stating that the intellectual development of pupils in the area of religion is being neglected in the pursuit of catechetical goals — goals which are not logically attainable in a compulsory classroom setting. As a result, the necessary equilibrium between the Catholic school's educational and catechetical goals is being lost with education being subsumed under catechesis. Yet, it could be argued that catechesis is also suffering as the failure to educate may inhibit the growth in personal freedom which is a precondition of all catechesis.

The practical implications of the argument proposed in this paper are that religious education and catechesis, at senior-cycle level, should be kept strictly separate within the Catholic school.[34] Such a separation is necessary as one is conceptually precluded from educating and catechising at the same time due to the different stances of faith and reason required in each activity. Because of the necessity of a free response to faith, participation in catechetical activities, at senior-cycle level, should be on a voluntary basis, as should attendance at school liturgies and retreats. In addition, religious education, an activity which is acceptable on both moral and educational grounds within a compulsory classroom situation, should replace the current practice of catechesis in the classroom. If the present prop of compulsion was removed from catechesis, even greater effort and resources would need to be channelled by school managements into catechetical activities in order to encourage the attainment of the Catholic school's legitimate catechetical goals.

I believe that the implementation of these proposals would, in fact, strengthen catechesis in the Catholic school by putting it on a sound moral and conceptual footing. The quality of catechesis itself could only improve as a result of its removal from the classroom as, henceforth, those being catechised would be willing and believing participants. Such a change in policy would place greater responsibility for catechesis on those agencies primarily responsible for it, namely, the home and the parish. Religious education, as well as contributing to the intellectual development of all pupils in the area of religion, would also provide the necessary cognitive support for the faith of believing pupils and prove a potential source of evangelisation or conversion in the case of unbelieving pupils. The change in approach towards the teaching of senior-cycle religion advocated in this paper would entail an acknowledgement by all concerned that religious education may be all that is possible in the case of some pupils. Such an admission follows logically from an acceptance of the notion that a person's assent to faith must be free.[35] Although the implementation of these proposals would not guarantee that every problem relating to the teaching of religion would disappear, it should, at least, ensure that there are no avoidable factors of a conceptual nature contributing to the problem.

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Irish Educational Studies , Vol.10, No.1, 1991

GIRLS INTO TECHNOLOGY : ISSUES ARISING FROM THE EVALUATION OF A CURRICULUM DEVELOPMENT PROJECT[1]

Jim Gleeson

1. Background to the Project

The Project under consideration in this paper (referred to subsequently as GNT) must be viewed in the broader context of the June, 1985, E.C. Resolution which set out an *Action Programme on Equal Opportunities for Girls and Boys in Education* : it is part of a European series of initiatives designed to promote diversification of educational and vocational choices on the part of boys and girls.[2] The curriculum development and evaluation model used by the European co-ordinator best fits the Classical Model.[3] The Republic of Ireland initiative — which was piloted between 1987 and 1989 in four post primary schools — involved the development of a unified set of teaching modules on four topics: Communications, Computers, "Designing and Making" and Electrics. While the promotion of interest and participation in the *New* Technologies was the stated purpose of the Programme at European level, distinctions between old and new technologies were not a major concern for the Irish Project: there certainly was, however, a strong computer component in the programme. The Project Director stated the main purpose of the Project as follows:

> to increase the awareness, interest and ultimately the participation of girls in courses of study and training related to the new technologies, by school-based intervention strategies involving teachers, students and parents.

The overall *scale* of the Project was small, both in terms of available finance and in terms of numbers of participants — one class per school in the four participating schools; a decision was taken by the head of one participating school to extend the programme to all second year students in the school during 1988-1989. Whereas each school chose to involve a different year group during 1987-1988 all schools chose second year students for involvement during 1988-1989; a total of 304 students (of whom 214 were female) participated over the two years. The four schools — two all-girl schools, two co-ed schools — were selected for involvement by the Department of Education; teacher interest in gender equity and availability of computer hardware were two of the main criteria for selection. Each of the main school types was represented: one girls' Secondary School, one girls' Vocational School, one Community School, one Comprehensive School. Three of the schools were situated in Dublin. Science/technology teachers were most heavily involved in the Project in three of the four schools. The involvement of school Guidance Counsellors in the Project proved problematic.

Some 46% of the annual budget for the Project came from the Commission of the European Community while the remainder was provided by the Department of Education which also provided the Project Director. She is an Inspector in the Psychological Services of the Department and is also National Policy Co-ordinator (NPC) for Equal Opportunities (EO). She undertook the leadership of the Project in addition to her other duties. Participating teachers came together for one day meetings during the Project — approximately three per year — as well as for some longer Workshops at the beginning and end. They drew up a Project rationale, revised the structure and content of the programme and adopted an approach to curriculum organisation and dissemination at a three day Workshop held in Shannon towards the end of the second year. An Interim External Evaluation Report was produced in 1988.[4]

Inevitably some changes of direction occurred during the process of development. The first of these was that the initial intention of offering support for girls and boys who would have chosen non-traditional occupations was abandoned due to lack of resources. Secondly the intended focus on parents was also affected by the same problem, and as a result this focus was abandoned.

Probably the most important change in relation to the programme, however, was the decision in April, 1989 to adopt an approach whereby "the modules are integrated into related examination subjects" in order to overcome the difficulty of finding time on the timetable for an extra intervention. In the design of the revised modules gender issues were integrated into each module. Such issues had previously been left to the school Guidance Counsellor.

2.0 Key Issues

The main *issues arising* out of the Project are as follows:-

2.1 School related issues

Firstly, the experience of the Project suggests that the Project aim should be seen in the context of the school community. Two (male) principals of schools located in urban working class areas stressed the prevalence of traditional attitudes in the homes. One principal, in particular, felt that far more basic issues relating to the role of women than subject and career choice need to be addressed. Secondly, the low level of inter-institutional co-operation between schools in relation to subject provision constitutes a barrier to the achievement of the Project's aims.[5] Thirdly, the main resource implication of Project participation for schools is an effective structure for *co-ordination*. Fourthly, only two Project schools made arrangements for the provision of the programme during 1989-1990, the year after the pilot phase.

2.2 Teacher related issues

Under this heading two important issues arise from the Project. The first of these concerns the difficulties experienced during the Project in achieving an effective working relationship between subject teachers (mainly from the Science/Technology area) and Guidance Counsellors. Guidance Counsellors, for the most part, showed a disappointingly low level of involvement in the project. The response of the Shannon Workshop to this problem was to integrate the awareness raising and career aspects into the modules for treatment by the class teacher while acknowledging the key importance of Guidance Counsellors to the achievement of the aims of the programmes in the general context of the school. It should be pointed out, however, that the Project did have an influence on Pastoral Care programmes in two of the participating schools, where gender issues were added to the programme.

Secondly, the staff development outcomes were significant for those teachers and Principals who participated in the Project. This was regarded by the Project Director as the single most significant outcome of the Project.[6] Participating teachers said that their awareness of gender issues had been raised considerably as a result of their involvement and that they now saw many more issues from a gender perspective than heretofore.

2.3 Student related issues

Under this heading the main concerns arising from the Project are as follows:

Participating teachers were very definite in their view that participants' levels of awareness of gender issues *had* been raised as a result of Project participation. They were not at all convinced, however, that participation would affect subject and career choice on the part of their students.

Cohort 1 (1987-88) participants from Schools A and C were generally quite positive about the programme in their response to a follow-up questionnaire from the External Evaluator in May 1989. Two girls in School A (both of whom chose Physics as a Leaving Certificate option) said that participation had affected their subject choice: quite a number of School C — a girls' secondary school — students took the attitude that they "would like to do more practical subjects but this is not possible in our school."

While no cohort 1 participant in the two schools in question said that Project participation had positively affected his/her choice of career, the career options of School C participants were generally non-traditional as expressed in their responses to the External Evaluation questionnaire of May, 1989. The main focus in the School A programme was on computers; some girls in the Project class in this school registered strong negative reactions to computers.

80% of participating students in 1988-1989 and 91% in 1987-1988 rated the programme as "good" or "very good." Gender differences in relation to ratings were statistically significant at .002 level with females being considerably more positive than males. Four main reasons were given by 1988-1989 participants for these positive ratings (in order of popularity):

"It was interesting and enjoyable"
"I liked the visits"
"It increased my awareness of gender issues"
"I liked the computers."

Statistically significant gender differences emerged in relation to the responses of participants to a number of statements related to gender (in all cases girls were more positive in their reactions):

As a result of this Project I have changed my career choice.

As a result of this Project I will choose/have chosen different school subjects.

As a result of this Project I have changed my attitude to women's work.

As a result of this Project I have changed my attitude to the place of women in society and in the home.

I have learned a lot of new skills during the Project.

I feel a sense of achievement out of the Project.

Girls should be encouraged to do Woodwork/Metalwork.

Boys should be encouraged to do Home Economics.

The visits to industrial and commercial locations, which were a feature of the Project, were regarded as the most valuable part of the programme, followed by the computers. When they were asked "what did you learn from the visits?" the students replied (in order of popularity):-

"I learned about jobs in industry"
"I learned about the state of gender equality in Ireland."

2.4 Curriculum related issues

Five issues call for attention under this heading. Firstly, the Project Director was clearly influenced by the results of the Girls into Science and Technology (GIST) Project, which took place in Britain from 1979-84. This was chiefly reflected in her preference for "doing" rather than "thinking" type learning activities. The emphasis in GIST [7] was on awareness raising ("thinking"); some of the findings were perceived as inconclusive and disappointing. The desire to have something concrete to show in the form of active students, materials and a video meant that "doing" was central to the Project under discussion.

Secondly, the Chief Executive of the National Council for Curriculum and Assessment said that he had not been informed about the Project. This is noteworthy for a variety of reasons. A number of new Junior Certificate programmes are relevant to the achievement of the Project aims: Technology, Business Studies, Science as well as possible developments in the area of Keyboard Skills. The suggested introduction of a core curriculum including science and technology for all at national level would obviously ensure female participation in these subjects: it would not necessarily ensure greater interest. Dr. Kathleen Lynch's study[8] prompts us to question our assumptions about the importance of technology subjects for all.

Thirdly, while girls' and mixed schools are well represented in the new Junior Technology programme, it appears that the focus for Junior Technology

INSET is on knowledge, skills and resources and that gender differences are not on the INSET agenda.

Fourthly, the course structure of the *Leaving Certificate Vocational Programme* announced recently (June 1989) is unlikely to be attractive to girls' schools or to girls in co-ed schools. While it stresses that[9] "new technologies will be undertaken in the technological subjects chosen" it lays down that students following the new programme will follow the Leaving Certificate programme in at least *five* subjects to include:

> Two subjects from Construction Studies, Engineering and Technical Drawing.

This condition will effectively rule out female participation in that the proportions of females taking even one of these subjects — not to mention two — are very small. This makes for an interesting comparison with the TVEI[10] initiative in England where gender equity is one of the key principles which has to be observed by participating schools.

Finally, the introduction of a modular approach to curriculum and assessment could make it far easier for schools to introduce girls to non-traditional activities. This seems to be the only way in which the NCCA's aspiration for a balanced curriculum can be achieved.

2.5 Use of our of school resources

The out of school visits were quite effective when students met with appropriate role models but such meetings were sometimes difficult to organise. Visits of role models to the school were found to be a worthwhile alternative and were far easier to organise. But who will organise such visits when the support provided by the Project is not available?

2.6 Parents

While the involvement of parents was part of the Project strategy this was not generally successful. An evening for parents was organised in one of the four participating schools for both cohorts. The parents in the other schools were, it would appear, generally unaware of their sons'/daughters' participation.

Research carried out in 1987-88 into the attitudes of a sample of participants' parents to gender issues suggests that parents are progressive in their thinking on gender issues.[11]

3.0 Dissemination

Project effectiveness to date has to be viewed in the light of the favourable circumstances obtaining at the pilot stage. These included: the central role of a few individuals with a strong commitment to and understanding of gender equality; the material benefits to participating schools in terms of hardware and software; the low demands on schools — one class group per year for eighty minutes per week; the exceptional timetabling arrangements in one of the schools where the Project was particularly effective; the employment by the Project of an organiser for the visits to the workplace during 1988-89. It is important that the controlled dissemination of the programme to other schools be carried out under normal conditions in order to evaluate its suitability for general use.

The proposed strategy of dissemination involves the *integration* of the programme into existing junior cycle subjects (e.g. Electrics into Junior Certificate Science). This represents a deliberate change of strategy from the interventionist approach adopted during the Project because this latter approach was deemed to be unrealistic. The strategy of integration was less than successful in the one school where it was attempted during 1988/89, due to organisational problems.

If neither intervention or integration strategies are feasible, a fundamental question must be asked about the Project approach of developing its own pack of teaching materials. An alternative strategy would involve the treatment of gender issues in the context of existing syllabi using teacher guidelines.

4.0 The Broader Context

When this Project is placed in the context of some related developments in England, Northern Ireland and Denmark, the following are the chief issues which emerge.

> The subject choices made by female Leaving Certificate students (1987) are more stereotyped than those of girls doing GCSE in Northern Ireland or England (1988). The participation rates of Intermediate Certificate girls in the relevant subjects compare favourably with those for GCSE. (See Table 1, Appendix 1).[12]
>
> The *Gender and Careers Education*[13] study and the figures for

GCSE participation in Northern Ireland would suggest that they too have a long way to go in securing gender equality where the conduct of schooling is concerned. The Northern Ireland provision includes curriculum structures (core curriculum, whole school review) and administrative structures (special grants, provision for INSET) all of which give Northern Ireland schools a decided advantage in promoting gender equity.

Schools in England are attempting to achieve greater equity of subject choice through the provision of a broad curriculum for all. Compulsion is coming to be seen as a step on the road to equality but compulsion on its own is clearly not enough. There is also a recognition that the curriculum as experienced and related assessment procedures must be adapted to the values, needs and cognitive styles of girls. The research in relation to TVEI at Tameside and Rochdale[14] supports the view expressed in the Interim Evaluation Report on the GNT Project that whole school review is the key to the resolution of the issue of gender inequality in schools.

The Danish experience[15] in relation to computers suggests that early intervention is important. Where the introduction of computers is postponed those with home computers (usually boys) gain an advantage that they are unlikely to relinquish.

5. Main Conclusions and Recommendations

The Project has developed a programme which contains a good balance of practical and awareness raising ("doing" and "thinking") activities. It has been very effective in raising students' (especially girls') levels of awareness of gender issues. The staff development outcomes for participating teachers have been significant.

The outcomes also include a number of important lessons for the future. These include:

1. The comparison with Northern Ireland highlights the importance of support structures such as special grants for equipment, INSET provision and a policy of whole school review. When gender equity is located in the context of such review the danger of isolating it as an issue is reduced.

2. The experience of the Project highlights the need for a more co-ordinated approach to planning at Department of Education level. This particular Project was not known of by the N.C.C.A.; there had been no contact between it and the Project which aims to increase female participating rates in Physics and Chemistry; the low level of inter-institutional co-operation between schools is a cause for concern.

3. While the Project Director's determination to show that something could be achieved is perfectly understandable, the favourable circumstances prevailing — viz, the interventionist approach, the material benefits of participation to schools and the generally favourable conditions under which the pilot was conducted — mean that dissemination will not be easy. The main lesson here is the importance of considering dissemination from the very beginning of a Project.

4. The experience of the Project highlights the different reactions of boys and girls to gender issues.

5. Experience of the Project suggests that certain school organisational supports are necessary for the effective implementation of this programme: the support of the principal; co-ordination; liaison between teachers and guidance services; parental involvement; liaison with the community; a structure of whole school review.

6. The Project experience highlights the need for whole school policy review (to include gender issues) and for greater levels of inter-institutional co-operation.

The main recommendation of the Final Evaluation Report was that the programme should be disseminated in a controlled manner to a cross-section of schools under less favourable circumstances than those prevailing at the pilot phase: schools should be required to organise their own visits, there should be no special material support for schools and the incorporation of the programme into existing junior cycle subjects would be carefully monitored. Other aspects to be monitored include: the implementation of whole school review; the use of out of school resources and the need for the programme in schools where Junior Technology is provided.

6. Postscript

This paper has focused on the main research findings: there are many related substantive issues which would provide a basis for further work. These include:

* The underlying assumptions of the official description of the Project as an Action Research Project.

* A re-appraisal of the overall aim of the Project in the light of the questions raised by Dr. Kathleen Lynch.

* An analysis of the "Doing Versus Thinking" dilemma which was always quite central to the Project — which comes first: attitudes or skills? Which survives longest?

* Issues relating to policy co-ordination at Department of Education/N.C.C.A. level e.g. the new Vocational Leaving Certificate; Junior Certificate Technology; core curriculum; the development, communication and implementation of policy.

* The location of the Republic of Ireland initiative in the European context. Economic considerations are now paramount in the pursuit of the aims of this Project in England and other European countries.

* Is it better to put the emphasis on gender equity per se (the approach of the Project) or on wider issues such as increased levels of participation for *all* in the new technologies? During 1987-89 the Irish Project described above was the responsibility of the National Policy Co-ordinator (NPC) for Equal Opportunities — a Department of Education Inspector who was also the Director of the GNT Project. In late 1989 responsibility for increasing the levels of female participation in the New Technologies was transferred to the NPC for New Information Technologies, also a Department of Education Inspector. The effect of this change may provide the basis for an interesting study.

* The context of the evaluation; why it was commissioned; the evaluation brief; style of evaluation; audience of evaluation reports; the uses of the reports; the formative role of evaluation in the Project.

NOTES

1. This paper is based on the concluding chapter of the Final External Evaluation Report on the Project described in Section 1. The report which was prepared by the author at the request of the Project Director, was submitted in December 1989, and is available from the Department of Education, Dublin.

2. The Project was officially described at national and European level as an Action-Research Project: this raises issues about the definition of action research.

3. The European co-ordinator recommended that "In each establishment two classes would participate in the special activities through the year, whereas in a third 'control' class only a questionnaire was used at the beginning and end of the year. Because the experimental classes also filled in this questionnaire it is possible to determine the effect on them of the actions taken." Euryclee Info.4, 1989.

4. This report was also prepared by the author. Copies are available from the Project Director at the Department of Education, Marlborough Street, Dublin.

5. Arising out of research carried out by the author for the Joint Oireachtas Committee on Women's Rights it would appear that the extent of inter-institutional co-operation is small, with only 24 schools involved in such arrangements at junior cycle level and 91 schools at senior cycle. (Based on raw data supplied by the Department of Education).

6. Research conducted by John Pratt et al for the Equal Opportunities Commission in England and Wales in 1982 found that "nearly half of teachers appear to be, overall, unsympathetic towards equality of opportunity. Moreover they showed marked disparity of attitudes dependent on the subject they teach." See Judith Whyte, Dean, R., Kent, L., Cruickshank, M., Ed., *Girl Friendly Schooling*, London, 1985, p.33. The results of research into the attitudes of teachers in Project schools towards gender related issues are presented in the Interim External Evaluation Report pp.26-29. Some interesting gender differences emerged.

7. This Project, which was based at Manchester Polytechnic, was described by one of its co-directors, Judith Whyte, as an innovative action research programme with the twin aims of investigating the causes of female underachievement in science and technology whilst simultaneously trying to change the situation (Whyte, J., *Girls Into Science and Technology*, London, 1986, p.1).

8. Lynch, Kathleen, *The Hidden Curriculum*, The Falmer Press, 1989. Lynch finds that there is no evidence for the view that the industrial or service sectors will require high levels of technical skills.

9. Department of Education Circular No.42/89 to schools regarding the Leaving Certificate Vocational Programme.

10. R.V.E.I. stands for Technical and Vocational Education Initiative which was announced by the Prime Minister, Margaret Thatcher, in the House of Commons on 12 November, 1982. She asked the Manpower Services Commission together with the Secretaries of State for Education and Science and Employment "to develop a pilot scheme for new institutional arrangements for technical and vocational education for 14—18 year-olds, within existing financial resources." This initiative has now passed beyond the pilot phase and is part of mainstream provision in England and Wales.

11. See Interim External Evaluation Report, September, 1988, pp.49-59, available from The Department of Education, Dublin.

12. The figures for the Republic of Ireland have been taken from *Tuarascail Staitistiul 1986-87*, the Northern Ireland figures have been taken from *Statistics for the Summer 1988 Examinations* published by the Northern Ireland Schools Examinations Council. The figures for England have been taken from the *National Consortium for Examination Results (NCER), G.C.S.E. Tabulations : All Consortium LEAS*, published by Chief Education Officer, Wiltshire County Council on behalf of the NCER, 1989. The information on participation in Higher Level Maths was supplied by Simon Eason, Statistics and Computing Officer, Southern Examining Group.

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APPENDIX 1

SUBJECT CHOICE : A COMPARISON BETWEEN ENGLAND, REPUBLIC OF IRELAND AND NORTHERN IRELAND:

TABLE 1: Uptake of certain subjects by girls in 1988 GCSE (England and Northern Ireland) and in Intermediate and Leaving Certificate (1987)*

Subject	England+ %	N. Ireland %	Republic of Ireland	
			Leaving Certificate %	Intermediate Certificate %
Maths (Higher Level)	47	49	41	52
Physics	26	29	24	
Chemistry	45	49	40	43 (Science)
Biology	65	63	68	
Home Economics	88	94	94	90
Woodwork/Building	4	N/A	1	6
Metalwork/Engineering	2	N/A	1	6
Mechanical/Technical Drawing/Graphic Communication	10	5	2	10
CDT	7	2	N/A	N/A
Technology	8	7	N/A	N/A
Art/Craft	52	51	71	58
Economics	43	41	34	
Accounting	50	75	52	56 (Commerce)
Business	71	73	56	

* These are the latest statistics available.

+ In the case of England cognate subjects have been amalgamated to produce the above results.

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GOVERNMENT POLICY, THE CHURCH OF IRELAND AND THE TEACHING OF IRISH 1940-1950

Valerie Jones

With the establishment of the Irish Free State Government in 1922 a major change took place in educational policy. An essential aim of the new government was "the strengthening of the national fibre by giving the language, history, music and tradition of Ireland their natural place in the life of the Irish school."[1] The introduction of Irish as a compulsory subject in the curriculum was widely approved by primary teachers and the INTO fully endorsed the new policy, which included the practice of teaching infants solely through the medium of Irish. This policy was to continue for almost fifty years with only two modifications. The first was in 1926, when the Report of the Second National Programme Conference recommended that infants be taught through English, prior to 10.30 a.m. and after 2 p.m.[2] The second was in 1934, when Derrig, the Fianna Fáil Minister for Education, issued the Revised Programme. Dissatisfied with the progress being made in reviving Irish, he restored the all-Irish day for infants and reduced requirements in English and Maths for older children.

During the thirties enthusiasm for the revival of Irish diminished and teachers complained that the burden of restoring the language had fallen on them. In 1933 the *Irish School Weekly* predicted a "sigh of relief from thousands of our immortal patriots if it were announced that the Department decided to cut out the Irish language altogether from the list of obligatory subjects in the school programme."[3] In 1936 the INTO set up a Committee of Inquiry to examine the issue. This resulted in a lengthy report, published in 1942, which described the school life of the average child as "repression, confusion and unhappiness,"[4] and revealed that the majority of infant teachers were opposed to the language policy. The INTOs findings were disregarded by Derrig, who was to continue as Minister for Education with only one short interval until 1948,[5] when the first Inter-Party Government took office.

The election of the first Inter-Party Government raised expectations that there would be changes in the language policy as the new Minister, Mulcahy, and his party Fine Gael, had promised changes in their election manifesto.[6]

One group which particularly welcomed the formation of the new government in 1948 was the Protestant minority. For them the period, 1922-1945, was a definite era of decline when the number of children at Protestant primary schools decreased annually from approximately 20,000 in the mid-twenties to approximately 10,500 in the mid-forties.[7] A shift in the size pattern of Protestant schools also took place and by the 1940s they were mainly one-teacher units. Though the minority had established good relations with Cosgrave and his governments and the Ministers for Education in the twenties, MacNeill and O'Sullivan, had treated their problems sympathetically, Protestants never accepted the policy of teaching infants solely through Irish. Another difficulty for Protestants was the requirement that Irish be taught for one hour a day to every class or combination of classes. As most of their schools were one-teacher units this would have meant that two or three hours would have had to be spent on Irish daily. For Protestant secondary schools the problem was that there were few Protestants qualified to teach Irish. This difficulty was increased by the ruling that failure in Irish at state examinations meant failure in the whole examination. This rule was first applied to the Intermediate Certificate examination in 1928 and to the Leaving Certificate examination in 1934.

While there had always been Protestants interested in the language and religious services in Irish that were held from 1907 onwards, the majority of Protestants were apathetic towards Irish and saw little use in learning it. The official attitude of the Church of Ireland was ambivalent. From 1926 the General Synod, (the church's parliament, which included a large number of representatives from Northern Ireland), voted unanimously annual grants for holding regular Irish services and it supported efforts by the Irish Guild of the Church, (Cumann Gaelach na hEaglaise), to translate the liturgy into Irish. Yet the church's chief educationalists continually denounced teaching through Irish. The Revised Programme of 1934 caused consternation among Protestant teachers and managers but Derrig showed little sympathy for them enquiring of one deputation, "Did the minority require special treatment?" The majority had accepted the conditions and special treatment for the minority would require special legislation."[8] In 1938 the Church of Ireland held its own inquiry into Irish teaching with similar results to those of the INTO.[9]

Other areas where the emphasis on Irish created difficulties were recruitment and teacher-training. Because of the weakness of Irish teaching at Protestant secondary schools it was difficult for candidates to gain the requirements for entry to the Church of Ireland Training College (C.I.T.C.) and during the forties that college became dependent on students from Coláiste Moibhí, the Protestant preparatory college. The forties were a bad time for

CITC as its student numbers dropped, its income shrank and its debts increased. But without its own training college the Church of Ireland's separate system of primary education could not have continued, and the Governors of CITC were forced to appeal to the Department of Education for help. From 1928-1943 the Principal of the college, Canon E.C. Hodges, was the church's spokesman on education. An able organiser and a gifted speaker he was fond of controversy and wrote many articles and letters to newspapers, frequently denouncing teaching through Irish. During his time as principal Hodges had successfully turned CITC into an Irish-speaking institution and he himself had made efforts to learn Irish, succeeding to the extent that he was able to take prayers in the language. Much loved by his students who recall him as a good principal and an excellent teacher his denunciations of the Department's policy were not always wise, coming from someone who had often to seek the Department's financial help. His speeches may have hardened Protestant resistance to Irish, for many people saw little difference between teaching Irish and teaching through Irish. In 1943 Hodges became Bishop of Limerick but he continued to act as spokesman for his church on education.

In the forties another clergyman, Canon W. Nesbitt Harvey, Rector of Sandford Parish, Ranelagh, became prominent as a spokesman for the Church of Ireland managers and he represented them on government committees, such as the Roe Committee and the Council of Education, where with two others he wrote Minority Report No.1 for inclusion with the 1954 Report of the Council of Education.[10] Intellectually gifted, he was unorthodox in his views and campaigned vigorously against compulsory Irish and corporal punishment. A colourful character, his views were not always in the best interests of the Church of Ireland.

The election of the first Inter-Party Government in 1948 raised Protestant expectations of a more sympathetic approach to their problems. Some modification took place with the introduction of the New Revised Programme for Infants which allowed English teaching as an optional subject for infants and first class for half an hour daily. But the Church of Ireland had hoped for greater changes. So Hodges was authorised by the General Synod Board of Education, the church's premier education committee, to meet Minister Mulcahy to discuss the difficulties of teaching through Irish in one-teacher schools. He also raised the question of recruitment to CITC. According to a confidential note by Mulcahy on the interview Hodges told him that they expected a "mitigation of emphasis on Irish" from the new government.[11] But a complaint had been received from a teacher that an inspector had been seeking an extension of teaching through Irish in his school. Following this interview the General Synod Board carried out a survey among Protestant teachers about teaching through Irish in his school. Following this interview the General Synod Board carried out a survey among Protestant teachers about teaching through Irish and the possibility of extending this to higher classes in the primary school. Observations about Irish teaching in one-teacher schools were also requested.[12] Replies were received from 150 teachers and the Board's findings were sent to Minister Mulcahy, whose officials drew up a response to it.

The Board found that there was "no hostility to Irish as such" and that teachers "loyally administered the policy of the Department." The Board suggested that teaching through Irish should be done only when the children's mother-tongue was Irish, and it went on:

> Not to use the home language of the children, be it Irish or English, is a psychological outrage upon the most helpless and inarticulate section of the community...... If a foreign atmosphere is introduced in school there is confusion and slumbering resentment in the minds of children.....[13]

The Board requested that where English was the home language Irish should be taught to infants for thirty minutes daily and that counting, tables and arithmetic should be taught through English. It asked for consideration of the difficulties of teaching through Irish in a one-teacher school and that the effects of teaching through Irish on recruitment be examined. The Board pleaded to be allowed to use English as a denominational privilege "as English is the language of the Bible and Prayer Book and Church Services for the vast majority of our children, any deterioration in the standard of English hurts us from a religious point of view."[14]

In a confidential memo drawn up in response to the Board the Department commented as follows on the Board's survey:

> The circular letter and answers are just a device to give a semblance of disinterestedness to a stand that has been there all the time. Anyone familiar with the attitude of the Protestant element to Irish could have no doubt whatever as to the kind of answer the said committee hoped to get from teachers. Certain teachers knew it too and were at some pains to please their managers by giving that answer.[15]

The remarks about "no hostility to Irish" were attributed to Hodges' "guilty conscience:"

> No one in this instance at any rate alleged such hostility. Therefore no need to deny it. Hodges knows in his heart hostility is there. We, in the Department, know it is there. Any attempt to deny it is either bluff or dishonesty.[16]

It went on:

> Loyalty — not a term I would apply to any activities with regard to Irish or the majority of Protestant teachers. They are generally poorly equipped for the work of teaching Irish, and not at any great pains to improve their competency for that work. The results they achieve in the majority of cases are poor. The only interest Protestants had in Irish until compulsory was to use it as a proselytising agency in the remote areas to which the Irish-speaking population had retreated. Achill, Connemara and Dunquin can tell of Protestant interest in Irish.[17]

This confidential memo went to discuss infant teaching through Irish, recruitment and concessions for Protestants. Some of its views were contradicted by an internal report drawn up by the Department in 1950.[18] Both were confidential and the Church of Ireland was unaware of the Department's views for in 1949 Harvey wrote to Mulcahy on behalf of the managers about the New Programme.[19] He expressed satisfaction with the changes Mulcahy had made and pointed out that the movement to revive Irish "largely originated and had been enthusiastically supported by well-known Irish Protestants." He repeated their objections to teaching through Irish, describing its effects as similar to "the reading of print by an adult with spectacles or a reading glass that waggles and will not stay still." He instanced the case of a child in a Protestant school having been caned for speaking English. This he felt would result in retarded mental development. He asked for less time to be spent on Irish and that it should be taught by using songs, recitations, and other activities which small children enjoyed. A further indication that Protestants were unaware of the Department's views was a speech by Hodges in 1950, when he told the General Synod that church representatives had "consulted in a friendly fashion with the Minister."[20]

Harvey's letter had little effect which was not surprising with the views prevalent in the Department and there the matter rested until 1950 when it was raised at the General Synod in May. Protestant disillusionment with the government's declaration of Ireland as a Republic may have had some effect on Harvey when he declared that they "heard much in newspapers about the police state in Northern Ireland but should remember that there was a good deal of the autocratic in their own state."[21] He also complained about the "flood of undiluted Irish nationalism in textbooks." Stung by these much publicised remarks Mulcahy ordered an immediate inquiry within the Department into Irish teaching in Protestant schools. At primary level it investigated the teachers' Irish qualifications and their attitudes to Irish. It also examined teaching through Irish, recruitment, textbooks and possible concessions to Protestants. At secondary level it analysed the Irish results at state examinations in 1949.

A 1950 internal Departmental report on the teaching of Irish in Protestant Schools disagreed in places with the earlier confidential memo of 1948. With regard to qualifications it said that Protestant primary teachers held similar qualifications to other teachers and were generally competent at Irish, most of them having passed through Coláiste Moibhí and CITC and had obtained the Bilingual Certificate.[22] It reported that "many young teachers — and many older ones too — are animated by a good spirit in teaching Irish." Infant classes were taught through Irish and in other standards Irish was taught for one hour a day. In a small number of schools a certain amount of teaching through Irish took place. The 1950 report showed some openness on the question of teaching infants through Irish, describing it as "very debatable." This contrasted with the view expressed in the earlier memo which stated:

> The experts of the General Synod have not yet realised it appears, that work in infant classes in modern times differs very much from work in other classes. The teacher determines the atmosphere, irrespective of the language she uses.[23]

On the question of textbooks the 1950 report admitted:

> There are undoubtedly some grounds for grievances here because the tone and outlook of many of them is undoubtedly Catholic. We have, on occasion, sanctioned certain English readers for Protestant schools for which general sanction was not allowed. Books in Irish are a difficulty. The Synod should select what is least objectionable (from their point of view) or take steps to provide a suitable set of Irish Readers for their own schools.[24]

Here the Department put the onus on the Protestants to provide their own textbooks and did not consider altering sanctioned texts to accommodate the religious views of the minority. This part of the 1950 report contrasted with the tone of the earlier memo which dismissed Protestant complaints about the emphasis on Irish "hurting them from a religious point of view," insisting that the half-hour English concession should "enable Protestants to give instruction in that language" and it went on, "If I wanted to be nasty I could say they produced Bibles in Irish ere this, why not do so again?"

With regard to recruitment both the 1948 memo and the 1950 report gave similar explanations for the shortage of Protestant candidates. The 1948 memo described Protestants as "generally well-to-do, with farms and businesses and their trend is towards avocations of that kind." It also felt that Protestants had a "more than ordinary chance of getting into banks, Guinness's or large Protestant firms." While the 1950 report said:

> Protestant schools try to pass their students at Intermediate in Irish and at the same time concentrate mainly on subjects required for the sizarship examination in TCD. Pupils not up to that standard usually go into business, professions, or the armed forces of the British Crown. It must be remembered that the Protestant population, though relatively small is extremely powerful financially and able to provide for its own young people, irrespective of Irish.[25]

It is clear from both the memo and report that the Department was ignorant of its own statistics, which showed that while there was an acute shortage of recruits for CITC there were plenty of poorer Protestants seeking to enter Coláiste Moibhí with its subsidised fees throughout the forties.[26] Had the Church of Ireland been able to provide secondary education for those candidates who were not accepted into the preparatory college there would have been no recruitment problem for CITC. The 1948 memo also blamed the shortage of Protestant recruits on the unattractiveness of teaching in small one-teacher schools where it said:

> The inspectors are unanimous that the level of intelligence is low due to intermarriage. Saw some of them myself and can bear this out. Cannot imagine a more distasteful assignment than to teach in some of the Protestant schools I saw.[27]

Both the memo and the report showed a similar attitude to possible concessions to Protestants, saying that there could be no "compulsion for Catholics and freedom for Protestants." The 1948 memo[28] pointed out that primary education was in theory, non-denominational, and that all denominations must be served alike. It further stated that as the Church of Ireland had only 2.3% of all pupils in primary schools, its numbers were not sufficiently large enough to justify any alterations in national policy which might have to apply to all. While according to the 1950 report "the 'Two-Nation' theory should not be recognised."

Both the memo and the report examined the position of Irish in Protestant secondary schools and named schools where Irish was well taught. The 1948 memo gave this explanation for poor results at state examinations:

> The experience of all our secondary inspectors is that in Protestant schools where the Head is favourable to Irish or even neutral — does not avail of opportunities to inveigh against it — the results are reasonably satisfactory. The general practice of Heads is to attack Irish in public on every occasion — prize day etc. Pupils cannot be expected to exert themselves at a subject which they know is unwanted and earnest Protestant teachers of Irish have frequently complained of the harmful effects of such attacks on efforts in class.[29]

The 1948 memo attributed the very low number of Protestants entering the Civil Service to the low standard of Irish at Protestant secondary schools and it went on, "Instead of remedying the defect Hodges and his like are trying to whittle down still more the little Protestant schools are doing for Irish." The 1950 report contained a detailed analysis of Intermediate and Leaving Certificate results at each Protestant secondary school in the country and divided schools into three categories, benevolent, realistic, or hostile to the language. One head was quoted as saying that "Irish spoiled the English accent of children. Most teachers of Irish are socially very much inferior to the pupils."[30] This report considered the sources supplying the schools and acknowledged that pupils from primary schools had a good knowledge of Irish but were "at times handicapped by age. Many were already 14 years of age when they arrived at secondary school." It accepted that many pupils came from private schools, junior departments of secondary schools or from abroad and so had little knowledge of Irish.

The 1950 report was approved and initialled by a number of inspectors and officials and it shows clearly why CITC had difficulty in the forties trying to get financial assistance from the Department. In November 1948 Minister Mulcahy received a deputation but without result.[31] Further appeals went unheeded and by 1950 the college's position was so critical that its future was threatened. Faced with the Department's unhelpfulness, and at one stage unable to obtain a reply, it was decided by the Board of Governors to "bring all influence it could command to bear on the government at the highest level."[32]

What influence was used was not recorded but in November 1950 the Minister was persuaded to give CITC a substantial increase back-dated to September 1949.

Overall, these extracts show that Protestants were not as well treated as is often claimed. While the criticisms of Harvey and Hodges did not help the minority there is nothing to show that the quiet diplomacy of Protestant leaders in the late fifties and early sixties would have achieved a different result. Protestants were expected to keep quiet and it was only when they complained loudly and were forceful that they were listened to. The whole period shows the ambivalent attitude of the Church of Ireland to Irish and the narrowness of its concern in educational matters. Both of the Department's confidential documents show the Department's attitudes to Protestants and highlight its prejudices and ignorances regarding the minority. Officially it was claimed that the educational system was non-denominational but in reality Protestants were disregarded because of their small numbers and the Department accommodated them by bending the rules when it felt like it. This was a foolish policy and it shows the failure of successive governments to appreciate the importance of treating the minority well. Comments such as Harvey's at the General Synod of the Church of Ireland in 1950 were made before an all-Ireland body and his audience would have included a large number of delegates from Northern Ireland. His remarks must have fuelled their fears about a united Ireland. How far the constant complaints of Southern Protestants about "compulsory Irish" affected Irish unity is not possible to say but it is certain that they reinforced unionist perceptions about life in the south as they watched the number of their southern co-religionists decline sharply.

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Irish Educational Studies, Vol 10, No 1, 1991

RECONCEPTUALIZING THE POST-PRIMARY CURRICULUM : A GRID-MATRIX FOR THE DESIGN AND EVALUATION OF A CORE CURRICULUM

Jim McKernan

1. Rationality and Curriculum Intentions

Curriculum is replete with *technical designs* (Tyler, 1949; Pratt, 1980; Guskey, 1984; Block, et al, 1989) for planning instruction and learning. On this technical model, curriculum planning can only proceed if it is guided by specific behavioural objectives which can be measured. This scientific, or behaviouristic, paradigm dominates the scholarly discourse on curriculum in the western world. It is a form of "technical rationality" seeing education as taking a means (content and method) to a preconceived end (the objectives). Yet, other curriculum design models abound; Stenhouse offered his *process model* as an alternative, in which aims are realised *in* rather than as a result of the process of education (Stenhouse, 1975). Schubert (1986) cites *practical* and *critical* models which compete alongside the technical "objectives" model. Recent curriculum policies (NCCA, 1989) support this technical model of curriculum. However, the curriculum in Irish post-primary schools is seriously "overloaded" with subjects and I argue that the initial debate about the construction of a common "core" curriculum, (CEB, 1984) based around an agreed set of outcomes for all pupils needs to be reiterated

It is not the purpose of this paper to exhume the many criticisms of technical rationality within a national curriculum (Elliott, 1988; Simons, 1988) which result, in extreme cases, in distorted forms of norm-referenced testing and even a "League Division Table" for schools through national assessment and monitoring of student achievement. Such developments have occurred in the United States and Britain through the various National Assessment of Educational Performance projects; notably the work of the Assessment of Performance Unit in the U.K. (Welford, et al 1986) and the kind of debate brought about by the establishment of the new "National Curriculum" in the United Kingdom, and other European nations. Rather, it is my intention to argue that one might also be acting as a rational curriculum planner by specifying broad aims for curriculum and then elucidating the educational principles of procedure imminent in the conduct of educating pupils in subjects or fields of knowledge; that is, educating them in the key concepts which give structure to the discipline, in the methods for creating new knowledge and in the tests of truth particular to the discipline. I then go on to propose a conceptual tool which has been constructed to act as a model for curriculum design and evaluation in light of the declared statements made by central educational decision-makers. Thus, in this paper I will argue that an experience-laden "core curriculum" can provide a basis for reconceptualizing curriculum in Ireland and provide a real alternative to the technical-rationality of the behaviourist, subject-driven curriculum now being promoted. The chief outcomes of this paper will be first, a reaffirmation and commitment to the substance of a core curriculum; second, an evaluation grid by which school staff and others can reflect upon the purposes of their work; and lastly, a description of the processes or pedagogy by which the substance and purpose of core curriculum are formed.

I wish to argue that certain valued ends are not measured by examinations, such as pupil self-esteem, inner-harmony, caring, inquiry-discovery methodologies etc; yet these are the sort of intentions which lie at the core of the purpose and process of education. The need for positive results is of course, very much a part of our life and the need for assessment and evaluation is of crucial importance. But one fears that we often use inappropriate modes of measuring a limited range of cognitive outcomes at the expense of *effective* and *social-personal* goals. In this regard one notes the pulling back from assessing attitudes and values in the policy document of the NCCA *A Guide To The Junior Certificate*. The acid test, I believe, of good education, is in keeping a caring attitude within the student as a prime principle of the curriculum.

If one is prepared to accept the role of the teacher and the school as agents of rational curriculum planning and change, then a major irreducible factor of immense difficulty in the curriculum development reform movement is the coming to grips with the essential fact that curriculum reform is about changing the *values held dear by the teaching ranks*. Until we have an adequate knowledge base about what teachers believe about curriculum then we shall carry on in an unenlightened state. We have been provided with such snapshops in recent curriculum studies of school personnel (McKernan, 1984; Crooks and McKernan, 1984; Lynch, 1989; Crooks, 1990).

Statements of school aims have come from educational authorities and administrators. Schools, including pupils, parents and teachers have, in the main, been treated as functionaries in a classical bureaucracy. Yet it is clear to all participants that the act of *being a participant in an educational encounter* means grasping the values, purposes and intentions which constitute an activity. The point that is crucial here is that teachers, as well as pupils and parents, must come to see themselves as participants rather than simply look for achievements, results, etc, because in this manner one can truly grasp and see what he or she does as having intrinsic value. That is, rational action begins from a practical/moral form of deliberation about how to realise purposes in specific school circumstances. Ends are refined and re-defined by reflection on action in particular situations, in which attempts are made to realise them. Thus, curriculum is a *practical* matter, rather than a *technical* endeavour, involving human plans, actions, observations and reflections on action. It is what I have called elsewhere "planned and studied enactment" (McKernan, 1988b, 1990d).

In Ireland, the Intermediate Certificate and Group Certificate programmes were replaced with a new Junior Certificate of Education in 1989 which, like its predecessors is subject-driven. Indeed, some might say that the new curriculum seeks to preserve more than it would change. It is education in a very conservative mood; perennialist and essentialist in character. The *Guide to the Junior Certificate* is a policy document and it states the aims of education in Ireland to be as follows:

> The general aim of education is to contribute towards the development of all aspects of the individual, including aesthetic, creative, critical, cultural, emotional, intellectual, moral, physical, political, social and spiritual development for personal and family life, for working life, for living in the community and for leisure. (NCCA, 1989 : 12).

These aims undergird the core curriculum and can be translated into defined learning objectives and experiences. A core curriculum is not a strict *subject curriculum;* it is a commitment to what is essential and basic to all pupils' education.

II. Core Curriculum and the Aims of Irish Education

It is also crucial that the aims of education are *common to all learners.* By this I simply mean that it is important to resurrect our thinking about *core curriculum* as that part of the curriculum including basic and essential learnings and areas of experience which all pupils are required to master. By *basic* I mean learnings which provide a basis or foundation for further learning; for example the ability to read, write and do sums would constitute *basic* *learnings.* By *essential learnings* I mean those which are necessary or required for functioning as a citizen in interpersonal life; for example, understanding the political system of the nation, being able to comprehend scientific graphs, balance a family budget, and so forth. We must endeavour to guide core curriculum away from two pitfalls: first, that it is a set of subjects, and second, that it is packaged centrally. At its heart are *core learning processes.* For example, included here are learning and thinking techniques, the integration of knowledge, dispositions and values; new skills and abilities, novel forms of expression e.g. dialogue journals; practical performances and finally social and personal skills.

The concept of the "core curriculum" has been widely understood to mean *compulsory subjects* such as Mathematics, English, Irish, Civics, Religious Education, etc. In the Irish context Hyland (1986 : 12) suggests:

> There would appear to be a strong case for revising the required official "core" curriculum for pupils in junior cycle to reflect the reality both in terms of the range of subjects offered by the majority of second-level schools and the choice of subjects being taken by pupils in these schools.

Hyland uses the term to denote a new concept the "subject core" which at present consists of the five or more required subjects set down by the Government Department of Education. This notion of a "subject core" is also being pursued in the new British National Curriculum which lists three "core subjects" including English, Science and Maths (and Welsh in Welsh speaking schools) and seven "foundation subjects" : history, geography, technology, music, art, and physical education, as well as a foreign language (DES, 1987). There is to my mind, a very grave danger that the more comprehensive notion of core curriculum is now being undersold — reduced to a subject framework. Core is varied and complicated; it includes more than traditional subject knowledge; it also encompasses *areas of experience, new modes of expression, new teaching tactics and strategies.* A fundamental criterion is that the "core" is organised around the aims or ideals held for all pupils. We need a sharper concept of core than has been given us in the guise of new subjects by the Curriculum and Examinations Board in the now famous *curriculum wheel* (*Issues and Structures, 1984*) in which the entire post primary curriculum was carved up into eight new areas of experiences — yet couched solely in terms of a subject organisation. This "wheel diagram" was to undergo some revision in the 1986 publication *In Our Schools,* a document issued by the reconstituted, or "Interim" Curriculum and Examinations Board. However, talk of a "wheel core" has been abandoned in favour of a subject approach.

A tentative outline of the key areas to occupy our emerging understanding of core curriculum appears in Figure 1 below. These areas are so placed because they identify and satisfy crucial criteria: they summon up universal elements of Irish life; they consist of *common learning experiences,* and the relationship of these learnings to life, employment and the controversial aspects of the human condition; they pick out vital concepts that give economy and *structure* to curriculum; and they acknowledge the growing pluralistic nature of an Ireland within a European community. They are not simply knowledge, or subject driven; they involve pupils in the exploration of knowledge; but most importantly, in educational encounters that are valued processes: critical thinking, inquiry learning, value exploration. What is more, all pupils would experience the core.

Figure 1 : Curriculum Areas of Experience & Knowledge

AREAS OF EXPERIENCE	CATEGORIES
In Our Schools (1986)	Issues and Structures (1984)
1. Arts Education (creative-aesthetic studies)	1. Creative & Aesthetic Studies
2. Guidance/Counselling	2 Guidance & Counselling
3. Language/Literature (Irish-English) (Other)	3. Communications Language Literature
4. Mathematical Studies	4. Mathematical Studies
5. Physical Education	5. Physical Education
6. Religious Education	6. Religious Education
7. Science & Technology	7. Science & New Technologies
8. Social/Political/Environmental Studies	8. Social and Political Studies

With these eight areas I would personally prefer to see the following areas incorporated: the *Extra-curriculum* and *Hidden Curriculum.* Further, I believe that pupils should be offered a range of mini-courses, options and electives, outside of the compulsory core both at Junior and Senior Cycle.

The NCCA have not tackled the thorny problems of inservice education in a satisfactory manner — which must surely be the top priority in any discussion about curriculum implementation. What they appear to have done is to return to the tradition of course design through syllabus design around traditional subjects and to begin to tighten up on the objectives of these subjects. They have embraced the technical rationality of the social behaviourists. It seems to me that this is retrograde and narrow in its conception of curriculum and culture and that what is now required is a curriculum mapping of those core (eight areas) elements which are basic and essential learnings and furthermore, which are desirable for all. Core is concerned with *general education* and not *special programmes*.

III. An Evaluation Grid and Matrix for the Core Curriculum

This section is devoted to describing a model for the design and evaluation of the core curriculum. My curriculum grid (Fig.2) has two parts: *Processes along the top margin*, and *Purposes* along the left margin. My reconceptualized curriculum matrix (Fig.3) has three major parts: *Processes* (or pedagogy), *Purposes*, and *Programmes* (or substance). The time is right for new conceptual thinking about curriculum as the discussion of curricular outcomes increasingly focuses upon objectives for programmes and even assessment objectives (NCCA, 1989). Granted, this is "prescriptive curriculum theory" in the sense that it argues for what "ought" to be the case. It is not my task to flesh out the content of the key fifteen by five areas indicated by the aims proposed in my matrix, merely to propose these intentions as worthwhile and meriting further discussion and development.

The Ends or Goals of Education : Purposes

The fifteen avowed *intentions*, or *goals* (aims) of curriculum are set out on the left side of the grid. These purposes are contained in the junior cycle policy document (NCCA, 1989). These purposes represent the *valued worthwhile features of the human condition* and thus are set up as goals or rational ends of education.

The Ends or Goals of Teaching/Learning Operations : Processes/Pedagogy

Five process goals relate to the operational tasks of teaching and learning are set out along the top portion of the grid (Fig.2).

Communication/Fluency, Cognitive Understanding/Manipulation, Care/Task Commitment, Self-Esteem, and Inquiry

These five processes act as pedagogical concerns for all teachers. These are targets for teachers, and procedural aims for pupils. The task is to help pupils to "own" these qualities so that they become second-nature. They are empirical tasks — tasks that can be observed, verified for accuracy etc. They are the major intentions of the processes in curriculum.

FIGURE 2 : Grid for Core in Curriculum Design and Evaluation[1]

	A. Fluency	B. Understanding	C. Care	D. Self Esteem	E. Research
1. Aesthetic	1A				
2. Creative					
3. Critical					
4. Cultural					
5. Emotional					
6. Intellectual					
7. Moral		7B			
8. Personal					
9. Physical					
10. Political					
11. Practical					
12. Recreational					
13. Social					
14. Spiritual					
15. Vocational			15C		

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[1] I owe an intellectual debt to Professor Arthur Foshay for his paper "Curriculum Design for the Humane School." *Theory Into Practice* Vol.10 (3) : 204-208, 1971 in which he presented his matrix for curriculum evaluation. Fig.3 is a substantially modified version of Foshay's model.

1. Communication and Fluency

This task of the teacher is effectively concerned with facilitating pupils so that they become "fluent" in the language; familiar with mathematical symbols and notations, with special vocabularies etc so that they can communicate with other humans. It involves more than language skills such as speaking English or Irish — it involves understanding cultural signs and symbols — the way of life of a people. It is very much a part of what should now be considered the "basic and essential" tasks of a core curriculum; more properly understood as that which needs to be the "mastery curriculum" (Cf. Block et al 1989). This is the foundation stone upon which further education is based. The 3 R's is a simple example of the Communication-Fluency element in curriculum design.

2. Cognitive Understanding/Manipulation

This task is essentially concerned with getting pupils to understand subjects, problems, issues, and other aspects of the human condition, but it goes further by asking them to manipulate information and data; in short, to interpret and be able to explain. One might be able to read a scientific article or symbol system yet fail to comprehend and understand it. Similarly knowing the letters of the alphabet does not equip one to write a great poem or book. It is the manipulation or cognitive use factor to which I refer — the ability to create literature, art or whatever — this is what I mean by understanding as a teaching target.

3. Care and Task Commitment

Once the student has become fluent so that he can communicate and understand sign and symbol systems then it is envisaged that he or she will want to "do more" with the content of the curriculum, particularly after the completion of formal education. Indeed this is acknowledged to be one of the goals of the Department's Rules and Programme curriculum. This is akin to the development of *care*, or *love* for a subject so that it gives pleasure. To watch a craftsman who loves his work is wonderful. Implicit as a pre-requisite in such activity is to stay "on task" or to persist. It seems to me that one cannot become good at anything unless one persists in performing in the genre. The secret here is to allow pupils to succeed at educationally valuable tasks, be they flute-playing or geomorphology.

4. Self-Esteem

Teachers must facilitate pupils to develop confidence and to feel positive about their work. Confident pupils possess self-esteem and Guskey (1985) provides empirical evidence that most young children possess a positive self-image during the early years of school but many lose this later, or it is destroyed by the curriculum or other school factors. Pupils require the confidence to become fluent, persistent and have the ability to understand and manipulate knowledge to their advantage.

Most of the 15 categories of purpose along the left margin of the grid are external or tangential to a strictly subject-based academic curriculum. The real task of education is to prepare the pupil generally, for living life *now,* and as an adult.

Examples of Purposes Within the Grid

1. *Aesthetic purposes* : These seek to develop awareness and appreciation of beauty in nature, art and life.

2. *Creative purposes* : Here pupils would encounter, interpret and perform works of art.

3. *Critical purposes* : Here pupils would critique design in works of art.

4. *Cultural purposes* : These seek to develop understanding of concepts of culture, sub-culture, minorities and other groups in Irish society.

5. *Emotional purposes* : Here pupils would be able to clarify feelings, emotions, dispositions on a range of human controversial issues.

6. *Intellectual purposes* : Here pupils would develop critical thinking skills and knowledge of disciplines.

7. *Moral purposes* : Here pupils would be able to separate moral from ethical value issues and distinguish between fact and value.

8. *Personal purposes* : Here pupils would become aware of and learn to clarify personal values.

9. *Physical purposes* : Here pupils would acquire knowledge and skills which contribute to healthy lifestyles.

10. *Political purposes* : Here pupils would be familiar with institutions and policies of political parties in Ireland and in European contexts.

11. *Practical purposes* : Here pupils would develop information-seeking skills viz. use a word processor to draft documents.

12. *Recreational purposes* : Here pupils would learn to use leisure time productively.

13. *Social purposes* : Here pupils would acquire and demonstrate effective group and interpersonal communications and human relations skills.

14. *Spiritual purposes* : Here pupils would learn to appreciate how religious beliefs shape and influence behaviour which may not be explained rationally.

15. *Vocational purposes* : Here pupils would learn to develop knowledge of various career opportunities and practical skills useful for employment.

These are merely offered as examples and not as a fully developed set of curriculum aims. School administrators and teachers might ask "To what extent are these aims and areas of curriculum available to all pupils for some or all of the time, and to some pupils for some or all of the time while they are at school?"

Interpreting the Core Curriculum Grid

Originally, I thought of core in this two-dimensional way, encompassing purpose and process. Where these goals intersect, important curriculum design and evaluation questions are raised. Let us examine cell 1A, which raises the question "How does the communications ability of the student contribute towards aesthetic development?" On the design side one might ask first, "Does the curriculum provide aesthetic encounters and activities as well as experiences in which a student can become more fluent/literate?" A second example concerns moral education as is found in cell 7B — consider the student who has examined various moral dilemmas concerning human behaviour and who is helped to make a moral reasoning type of judgement. This student understands something of the consequences of alternative courses of human action and can be said to possess a particular level of moral understanding. Now this area has been sadly neglected in the past but has been receiving increasing attention through programmes of health education (McKernan, 1988). Another example is found in cell 15C which asks "How does care/commitment in a given subject/area of experience contribute to vocational development?" For example, imagine a computer training laboratory where pupils are learning word processing skills. Pupils will need to spend considerable time practising document editing, printing techniques and similar skills. This is a task commitment they must accept. They must be willing to persist and be committed to attain fluency and manipulation here. One point which needs to be made is that there are some cells which we know very little about — for example the creative dimension — take cell 2B; how well do we know what children understand about being creative? Or more problematically for teachers: "how do we assess creative work? In all there are some 75 cells in my initial curriculum grid; they all require two kinds of answers: To what extent does this cell contribute anything to the present course design:? And to what extent does the behaviour of the student correspond to the qualities intersecting on this or that specific cell?

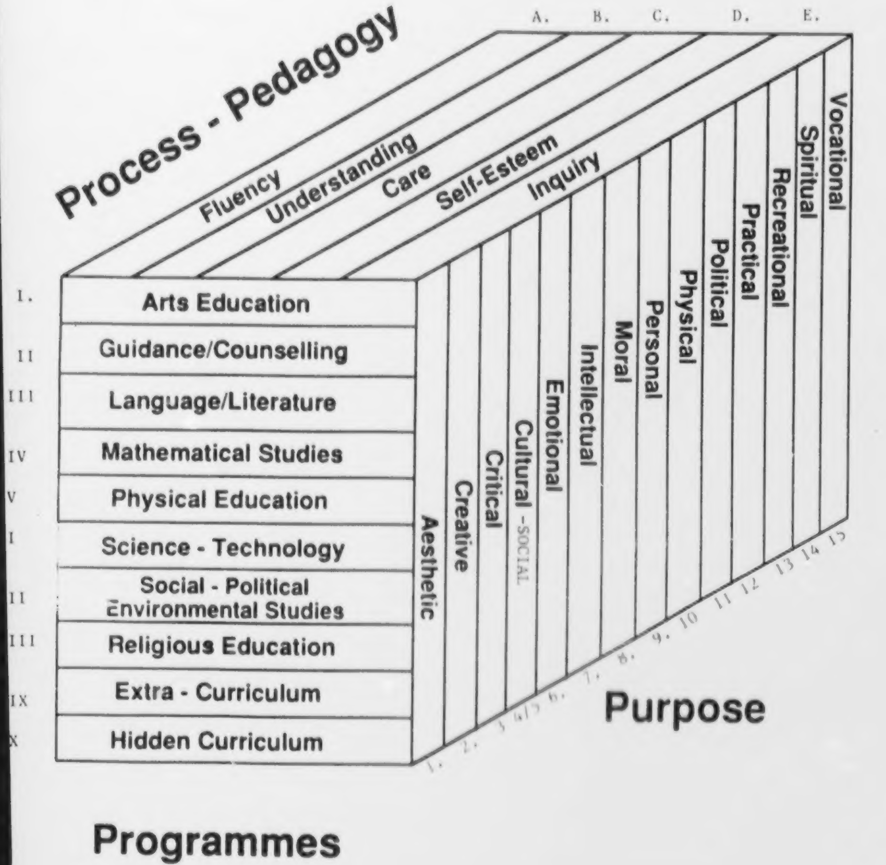
The Third Dimension : Programmes

Figure 3 sets out the Core Curriculum Cube which includes three parts: *purposes, processes,* and *programmes.* Thus I have moved from a two dimensional grid to a three-way matrix. The third dimension is *the core content,* or *substance.* Thus far we have considered a grid with *purpose* and *process.* But in teaching and learning one must teach something to a learner. This something is the substance or the programme. Schools have a wide variety of programmes which we think of mainly as the formal subjects or academic programmes. I have listed ten of these in the cube. The first eight correspond to recent policy talk in Ireland of a conceptual core; but in my analysis I argue for two separate entities which I call the *Extracurriculum* and the *Hidden Curriculum.* This matrix is a checklist for all schools to use in examining their curriculum. The value of the matrix is that it helps us to think of the curriculum as a whole.

Programmes represent the content or substance of curriculum and for the purposes of Ireland I include ten: Arts Education; guidance-Counselling; Language-Literature; Mathematical Studies; Physical Education; Science & Technology; Social/Political & Environmental Studies; Religious Education; Extra-Curricular Activities; and Hidden Curriculum.

FIGURE 3

The Common Core Curriculum Matrix



The final two, Extra-Curriculum and Hidden Curriculum, might seem misplaced but I believe it is time we acknowledge that pupils learn through these, and we can plan for extracurricular activities (like Chess Clubs) and the potential of the hidden curriculum. We can now ask of cube VII-B-6 "What do pupils learn to feel of Irish politics that affects emotions like national passion?" or "How does the 'hidden curriculum' contribute to self-esteem and personal development cube X-D-9?" We must acknowledge that the school has a responsibility to work for the development of the whole child not just the intellectual/academic development of the child.

Few schools have such checklists or statements of purpose. It is time that they began to examine their performance and their expressed intentions. It will be illuminating to try to ascertain just what schools are achieving. As it stands the cube matrix is rough-hewn and does not descend to the more concrete world of behavioural objectives which can be verified empirically. But the real world of the school and curriculum theory in schools is a rough and tumble state of affairs. The cube matrix is offered as a topic worthy of further discussion. It does define a common core that links primary and post-primary education.

I think it is quite reasonable to argue that an educator must have an aim; otherwise education would not count as a rational and productive activity. Yet it is less clear as to whether educators must adopt the strict road of operationally defining all of the possible outcomes desired as pupil behaviours in the form of instructional/behavioural objectives. Yet that seems to be the road taken by central curriculum authorities in these islands. Educators must have aims expressed in the form of culturally, intellectually and other worth while values which include knowledge as well as skills, abilities, attitudinal dispositions and other desired qualities. What we then require is a plan which maps out the dimensions of human experience in which pupils can learn and construct meaning about the human condition.

The Processes of Learning

In addition to subject knowledge, chief aims should locate the wide variety of student learning experiences referred to above; for example, we now are beginning to accumulate some evidence that pupils learn just as effectively through small group work as they do in whole group organisational patterns; or, through simulation games, role-playing, brainstorming and other problem-solving educational activities.

Second, we have a better view through curriculum research about the economy of curriculum — that learning proceeds most effectively when it is highly structured (Guskey, 1985) into discrete units with constant teacher feedback and corrective activities. Third, we have not exploited the range of teaching styles adequately. For example, new forms of expression, such as dialogue journals, oral literature, creative writing, media study, practicals, project work, field trips, nature trails. We need to unearth the particular forms of procedure for excellence in the arts, humanities and sciences, and turn these into curriculum objectives. We need pupils to work as if they were artists, writers, scientists or whatever. Finally, we need to pay urgent attention to the complex process of evaluation to mean more than pupil public summative examinations. We need more looking at teacher self-evaluation and whole-school curriculum evaluation. Inservice education has not addressed any of these latter two aspects in any depth. It is the expressed desire of school administrators to build in aspects of teacher evaluation as part of the final public examination system (Crooks and McKernan, 1984).

Irish curriculum policy-makers are now presented with a golden opportunity to accept or reject a technical rationality which, if left unchecked will, I suspect, lead to the "technologisation of reason" on the way down the road to a National Curriculum, rather like that obtaining in the United Kingdom. If that path is selected one must realise that we could end up with the sort of curriculum described by Professor John Elliott:

> The National Curriculum is rather like a crate of bottles. The crate suggests an overall framework. Each bottle stands for a foundation subject and is filled with a different liquid. On the side of each bottle there is a measuring scale of ten levels indicating how much liquid a child ought to consume at any particular age (Elliott, 1989:29).

Ultimately, the question to be answered in Ireland is "Do we want education to be like a production process or like an educational process?" The idea of education makes sense only in the context of the latter as a reflective social practice.

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SPORT AND EDUCATION: THE CASE FOR A NON-COMPETITIVE APPROACH

Réamonn Ó Donnchadha

Introduction

In 1988 after a somewhat torrid and controversial All Ireland Football Final, a member of the winning team wrote an article for a Sunday newspaper entitled "Nice guys come second." In the euphoria and mutual admiration of the occasion, the remark was virtually ignored. It did, however, serve to draw attention to a disturbing trend in sport, at all levels. I refer to the growing preoccupation with competition in sport, especially in childrens' sport, and the consequent relegation of enjoyment, participation and fun to a position of secondary importance, with winning and the need to win becoming the dominant factor in games. This paper argues that if we are to avoid an inexorable slide to a situation where, as one coach put it, "winning isn't everything, it is the only thing" — then we should stop and examine some of the ideas involved in sport for children, so that it remains sport and does not become work. I would like to examine some of the uncontested assumptions underlying the idea of competitive sport and offer some suggestions about what our response as teachers should be.

Competitive Sport

To begin with, in competitive sport, the idea of winning becomes central. All other reasons for taking part become at best secondary, at worst non-existent. As a 1956 Report on School Health[1] in America pointed out, in competitive sport the chief stress is placed on winning, with excessive emotional pressures applied by significant adults involved in childrens' sport such as teachers, coaches, parents. This primacy of winning leads to parents and others expressing undue concern over winning and almost inevitably ends in a product oriented system which, as Scott[2] points out, causes the opponent to be viewed as an obstacle or as an enemy, who must be overcome in order to achieve victory.

A further aspect of competitive sport is the influence of extrinsic rewards on the person taking part. While extrinsic rewards are an acceptable part of "sport" at the professional level, or at the more serious level of the olympic athlete, or the international player, such rewards invariably impose a problematic dimension on childrens' sport, on the reasons for playing, and on the satisfaction gained from it. Such extrinsic rewards may be material, such as money or trophies, or they may be psychological such as social evaluation, parental approval or peer comparison. In competitive sport, moreover, individuals perceive the cause of their involvement to be largely external to themselves, and to that degree they will not experience as primary benefits the feelings of mastery and competence which accompany sport involvement which is based on intrinsic motivation.

Effects of Competitive Sport

Perhaps the most visible effect of competitive sport on children is the change in attitude with regard to rewards. Winning and the trophy all too often become the main reason for participation and as Green and Lepper[3] found out during the mid seventies in a series of studies involving children who had a high intrinsic interest in a particular activity, the expectation of a reward for taking part in the activity significantly diminished the childrens' interest in the activity. Sport in its true sense, is intrinsically interesting for children but when we introduce the idea of extrinsic rewards, be they material or psychological, we change the whole meaning of the word sport and further we change the basic reason for childrens' participation. Naturally children are attracted by immediate tangible reward, and may eventually become subject to the reward rather than the activity.

Deci,[4] in 1975, was among the first to draw attention to extrinsic motivation and its effect on childrens' participation in sport. In what he terms the cognitive evaluation theory he states that the experience of working for rewards can initiate a change in perceived locus of causality. In effect he states that intrinsic motivation decreases when the external reward is perceived to be the primary reason for participation. The single most noticeable effect of this is to eliminate the fun element. Numerous anecdotes provide evidence that what professional sports people miss is the fun. Both Navratilova and Becker blamed their 1988 bad form on the lack of fun in their lives and in their game. Perhaps the most poignant example of this is the recent admission by Olympic swimmer Sharon Davies (Sunday Times 19/11/89) that she gave up swimming at 18 having just won an Olympic medal because of her father's obsessive desire to make her a champion. She counsels parents to let their youngsters swim for fun and to take up serious sport later in life.

The controlling aspect of offering rewards for performance may be, as Ryan[5] points out, an attempt to get improved performance, but in effect this turns what should be play, into the serious business of work. A group of researchers in 1977[6] all agreed that competing is similar in many ways to working for a reward, with winning being more important, even replacing the idea of doing one's best. Competing they found can provide positive feedback, if the children win and, therefore, experience success. But for every winner there is at least an equal number of losers, who, especially if they are children, in a highly competitive sport setting, will often be subject to doubts about ability, competence and self-image. Because of the major publicity given to competitive sport, because of the part played in it by significant adults and because of the fact that for children, motor skills and peer influence are so important, it is inevitable that competitive sport will have decisive or indeed crucial effects on a child's self-esteem formation. Insofar as victory is the predominant end in competitive sport these effects give serious cause for concern from an educational standpoint.

Another area of concern here is the fact that children may feel that they must excel in order to satisfy parents' vicarious needs. Given that it is healthy and normal for parents to feel satisfaction at their childrens' achievements, the danger of this vicarious satisfaction becoming the primary motivation for a child's involvement is not too hard to imagine. If such should happen it makes losing, and the associated sense of failure, all the more damaging to the child's self esteem in as much as he has not only "let himself down," but he also feels he has failed his parents. In short, pressure on children to win to satisfy others' vicarious needs may arguably be held to be an infringement of the rights of children.

A less evident effect of competition is what is termed competitive stress. Scanlan[7] has addressed the subject of competitive stress and the child athlete in some depth. It is defined as the negative emotional reaction that a child feels when his self esteem is threatened. The threat occurs when the young athlete perceives an imbalance between his ability to meet the performance demands of competition and the expectations of significant others regarding his performance. That the child's stress is a function of his own perception (shaped no doubt by significant adults) means that the stress may be unnecessary in as much as his perception may be wrong. It also means that stress can occur at any time before, during or after the competition.

Competitive sport is of necessity stressful because it involves extensive social evaluation of motor competence; social evaluation being the appraisal information about ability that an individual receives from other people.

Typically, children place great importance on motor competence and are especially sensitive to appraisals by significant others about this ability and, as Scanlan points out, sport situations may become particularly threatening if the child anticipates either failing, or negative appraisals from significant adults. Pierce[8] (1980) demonstrated the importance of ability appraisals when he found that not only were athletes in such situations worried about performance (which of course influences performance) but also that such worries would prevent them from continuing in the sport. Some studies have shown that endurance training at an early age in sport which requires great levels of working capacity, such as swimming or running, may lead to physiological benefits, and performance enhancement at maturity. But in such cases the child's sport experiences are confined to just this one, and additionally, such caveats as possible burnout, hostility to skills acquired, even to the sport itself or simply dropping out of the sport, cannot be ignored. In other words where the child has been exposed to competitive sports programmes he may not even be participating when he reaches maturity, in which case the question of whether performance is enhanced, becomes irrelevant.

Individual sports are clearly more inherently evaluative than team sports but it must be remembered that any sudden focus on individual performance, even within a team game, is likely to challenge the child's confidence. Competitive sport, because it is such a visible achievement arena for children, where athletic competence is publicly tested and evaluated, may frequently exacerbate the perceived imbalance between demands and capabilities. Such continued exposure to competition, especially to failure, may in turn lead to the development of what we call competitive Trait Anxiety, which is a disposition to perceive competitive situations as threatening to self esteem. Scanlan[9] in her twin studies of 1975 and 1977 found that Competitive Trait Anxiety was a "... significant source of pre-competition stress." Perhaps more disturbingly she found that win/loss anxiety was the major cause of post-competition stress. Not only was it a question of winning or losing but the margin of winning was considered to be a significant factor in post-competition stress.

The question of self-esteem cannot be ignored here, either in its effect on competitive stress, or in the effect that competitive stress has on self esteem. Many self-theorists have cast global self-esteem as multidimensional in nature, encompassing competence, social acceptance, control and virtue,[10] and considering the centrality of affect in formulation of self esteem.[11] It is to be expected that the pride, joy, shame or disappointment which accompany perceptions of competence or incompetence will have a considerable influence on future motivated behaviour. In acknowledging the modifying effects of Rosenberg's "psychological centrality" (1979) it should be pointed out that where sport competence is salient in the lives of children, anxiety will play a significant part in self-esteem. The motivational value of self-esteem on future behaviour not only means that persons with high self-esteem try harder, persist in difficult situations and eventually succeed,[12] (Bandura 77) but also that over time low self-esteem children adopt failure-prone strategies, such as setting unrealistic goals or not participating, and will attribute unsuccessful actions to lack of ability and success to luck. With regard to competitive stress and children, Scanlan found that there is an inverse relationship between stress and fun. Though unable to establish a causal relationship which would show that more fun created less stress, or less stress resulted in more fun, it was clear that the players who had fun experienced lower levels of anxiety, a finding which was echoed by Greer and Stewart.[13] In their perceptive study they showed that children, when left to their own devices will concentrate on the fun aspect of games and yet transfer the win/lose values to the more organised and structured milieux of competitive sport, when this is required of them by schools, coaches etc.

Aggression and its close relative violent behaviour are closely connected with competitive sport. Where the primary goal is winning, and all other considerations, therefore, being secondary, it is hardly surprising that aggressive behaviour will flourish. Burris Husman[14] (1980) a pioneer in aggression research, is in no doubt that social learning theory provides the most complete explanation for aggression in sports environments. He is supported by another well known psychologist in the sport field whose definition is both comprehensive and clear. Silva[15] asserts that "... aggressive behaviour is an overt verbal, or physical act that can psychologically or physically damage another person or oneself." Both Husman and Silva isolate three factors which distinguish aggressive and non-aggressive behaviour. Aggressive behaviour is behaviour which involves the selection of action which we know will injure, we intend it to injure and it is directed against a person.

It is important to make the following points in regard to aggression. Aggressive behaviour is not be be confused with assertive behaviour, which is acceptable and within the rules of sport. The confusion of the terms aggressive behaviour and assertive behaviour is one of the main reasons for the increasing acceptance of aggression and violence in sport. Assertive behaviour is goal directed without the attempt to injure. Both Husman and Silva contend that aggression is learned in social settings. Together with other social learning theorists, notably Bandura[16] they support the theory which predicts that aggression will occur in sports where players have a high expectation of reward and where this reward outweighs the deterrent effects of punishment; the person's expectations being influenced by his own previous experience or by seeing such behaviour rewarded in others. Here it is important to underscore the part played by two things, both connected with each other, and each with competitive sport. They are the importance of winning and of extrinsic rewards. Both tangible rewards and psychological rewards have been shown to be powerful reinforcers of aggressive behaviour in sport.[17]

Apart from the obvious possibility of creating a violent milieu for sport, there is also the danger of transferring the successful, violent behaviour to other areas of the child's life. It is equally the case that where sport is played in a non-competitive fashion, the control of temper, impulse and selfishness can also transfer to other areas of the child's life. The danger of socialisation towards deviance is evident not only in the aggressive aspects of sport, but also in another aspect of competitive sport, namely violation of rules. It is of course healthy to compete fairly, to strive to win within well devised rules, to seek continually to improve, as long traditions of good sportsmanship have always taught; but it is anything but healthy to become obsessed with beating your opponent, cheating or tricking in order to win.

Myths about Competitive Sport

A number of assumptions contained in the idea of structured competitive sport need to be challenged. Is it true to say that the more organised and structured nature of competitive sport increases the play opportunities for children? While it is probable that the wider the provision for structured sport the greater the number of children likely to be involved, it must also be clear that such an increased involvement will be within the competitive framework. It does appear, however, that with television's adoption of majority sports, the range of sports being played is narrowing. The idea that competitive sport produces more skilled athletes is as yet unsustainable. There are, clearly, a small number of cases where coaching and competition from an early age lead to world records. But such success occurs only in sports which require a high working capacity, and there is the inescapable risk of burn-out, where the athlete develops an aversion to the skills in which he has become so successful. The assumption that structured, supervised sport is safer is not being questioned. Evidence is emerging which shows the physical and psychological damage caused by structured competitive sport. Two recent studies have shown that far from relieving tension or lessening aggressive tendencies, competitive sport is indeed more likely to lead to further aggressive behaviour.[18]

Non Competitive Sport

Non-competitive sport is not any particular game, or type of fame. It is an approach to sport and games which focuses in a special way on the educational potential of sport, emphasises feelings of wellbeing, competence and mastery. Furthermore, in marked contrast to what we termed competitive sport, the importance of winning both for the participant and others involved in the sport becomes relegated. Millar[19] was among the first to question the value of ends-oriented sport. His contention that playing games to win is not actually playing, but working, is echoed by Ingham and Loy's assertion that "... sport needs no other justification than that it provides a setting for sociability and fun."[20] Sage[21] takes the idea a step further with the suggestion of an alternative sport structure in which the players can be socialised with such values as cooperation and participation rather than confrontation and domination. A number of writers[22] propose a sport model where the coach rejects such ideas as conformity, authoritarianism and control in favour of uniqueness independence and self-actualisation. A recent study involving young people, motivation and fun concluded that there is a clear link between fun in sport and such notions as skill development, personal skill mastery and the fact that fame outcome is not the most significant aspect.[23] The concept of non-competitive sport does not deny the innate competitive urges of the person, nor does it negate the pursuit of excellence, but it unequivocally denies the primacy of winning. In non-competitive sport, the purpose of sport takes on a much wider meaning, than just the idea of one team asserting superiority over another. In fact these motives become completely subjugated to the ideas of participation, enjoyment, self-mastery and competence. The stress associated with winning/losing is thus eliminated, and self-development and psychological well being become the dominant factors in childrens' participation in sport.

The concept of non-competitive sport is firmly rooted in the notion of intrinsic motivation, an idea which though seldom to the forefront in discussions of modern sport, has been part of childrens' play for as long as play has existed.[24] A common but defective definition of intrinsic motivation states that people are intrinsically motivated if they participate in an activity without receiving any external reward. The deficiency in this definition is its lack of attention to underlying cause. Deci's (1975) book on intrinsic motivation, with its emphasis on cause has provided us with what has since been accepted as the benchmark for intrinsic motivation. Deci focuses on underlying psychological processes in his definition, which states that intrinsically motivated behaviour is behaviour which is motivated by a person's innate desire to feel competent and self-determining when dealing with his environment. Implicit in this definition is the notion that people feel that their actions are self-determining and, therefore, provide a sense of personal control leading to competence and mastery. There are a number of very important aspects contained here. The first is the importance of self. It is important from the point of view of what

De Charms[25] calls locus of causality, whereby the person feels he is the controlling factor of his involvement in sport. Self is also important because of the positive effects on the self-concept formation of the child. The second aspect of intrinsic motivation to be noted is the feeling that the child has that he is exerting mastery over his environment. Thirdly, there is the important aspect of motor competence. Professor Scanlan[26] stressed the importance of motor competence in the psychological growth of children. She believes that the area of motor competence and perceived motor competence are both domains where children utilise social comparison eventually leading to healthy self-esteem.

One of the major educational features of non-competitive sport is its concern to shift the young athlete's concentration from competitive ability to achievement ability, or to give achievement ability the central place which is all too often enjoyed by competitive prowess. The goal of each individual thus becomes to perform as well as possible, regardless of the outcome. This achievement behaviour has been termed sport mastery (Roberts 1984),[27] and is very much akin to what Nicholls[28] terms task-involved ability. The demonstration of ability relative to others, is not necessary in this type of sport, but the player tries to achieve mastery, through improving or perfecting a skill, rather than demonstrating a higher capacity than others. In this way, high versus low ability is judged in comparison to the individual's previous level of ability at the particular activity. This concept is closely linked to intrinsic motivation, and extreme states of sport mastery are characterised by a marked sense of control. The person can become absorbed in the task for its own sake, with any sense of competitive ability being overshadowed, even over-ridden, by the involvement in the task. Sport mastery is less complex than competitive ability. To begin with the child does not have to assess the competencies of others in order to reach conclusions about probable success or failure. The sport mastery oriented player simply processes the information that the task provides, carries out the task and notes her own level of mastery of the task. Clearly effort is important but it is evident to the participant that effort leads to greater learning, mastery and eventual competence. The most important feature of this concept of achievement is that there is no failure, or low ability and while total mastery may not be readily demonstrated, neither is lack of ability. Not only is it task-oriented but it is person specific, with the only feedback being to inform the player of his own level of mastery.

The role of perceived ability as proposed by Nicholls in 1980, which posits the idea that the achievement goal of individuals is to demonstrate and develop high ability, while wishing to avoid low ability, is a central construct in the idea of sport mastery. This perception of ability, argues Roberts, mediates many achievement behaviours such as adherence, effort, attention and sport selection. It should be noted here that there is a significant relationship between perception of low ability and drop-out from sport at the age when children begin to distinguish between ability and effort. In this model of sport the role of the coach and leader needs to be reassessed. The traditional coaching model, which emphasises strict structures, conformity and hierarchical forms of authority must be questioned, because if coaches make all the decisions they are precluding rather than nurturing self-development.

Conclusion

The goal of school sports in the non-competitive approach becomes the production of increasing uniqueness and independence on a wide scale, something which cannot easily be achieved within the autocratic atmosphere of competitive sport. In this latter case the coach is all too often an omniscient authority figure with the young players learning a discipline of passivity in relation to authority and an ethic of contest where their abilities come to be deployed in a social context. We should promote the fulfilment of the athletes, which implies the actualisation of the full potentialities for the personal-social growth which are latent in childhood. What this means for the teacher is the acceptance of the premise that sport is more for the players than for the coaches, the school or the parents. Its value is measured in terms of increased humanism, increased power to do and increased capacity to appreciate. The coach/teacher here sees herself as a resource person who endeavours to make her players free of her, able to make their own decisions and be responsible for their actions. Within the humanist framework is the implicit acknowledgement of the need for self-directing responsible adults, but also the belief that this is best achieved by providing a sport environment where players can practice self-discipline and at the same time become emancipated from group conformity.

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VALUES DEVELOPMENT AS CONTENT FOR THE CURRICULUM

Raymond W. Houghton

Nobody invented education. It just happened. It was a response to a need. Education was "being done" long before there was realisation of it. It was like philosophy in that respect. No one said, "Let us seek truth." Philosophy was "being done" long before there was a name for it.

For education is related to socialisation. They are not the same thing. Socialisation is a process to desired ends. Education is an intended means. It may well be more than that, but in its social definition education is the name whereby society attempts to transmit to an ensuing generation that which it values.

In the beginning, and for a very long time, low level, but by no means unsophisticated socialisation happened behaviourally, and surely unconsciously, as in animals. It is presumed, of course, that organisms are born with individualised genetic histories and, hence, some behaviour is of a kind termed "instinctual." Whether genetically coded or otherwise it must be assumed that behaviour can change, that learning can occur.

Education involves learning but is not the same as learning. Learning is change in behaviour, Skinner (Skinner, 1974) say, and that will do for the moment. Learning preceded education; proceeds education, for all organisms have learned and continue to learn. They learn from birth at least, and probably before. In the process of learning, at random initially, more particularly as they mature. Even "lower" life forms come to low level, yet sophisticated "socialisation."

It is convenient to believe that regularised observation of living organisms is a phenomenon of recent times. Perhaps conscious observation is a more recent phenomenon, but certainly the most primitive beings were keen observers of other life forms. *Homo sapiens* would never have emerged, let alone survived, if that were not so. Higher forms of organisms always observed lower forms and probably vice versa.[1] Perhaps *homo sapiens* is a lower form who most carefully observed higher forms.

The initiation of long term, intensive, deliberate observation of animals in their natural state (Morris, 1977) during the past thirty years has, without doubt, brought about a reassessment of scientific opinion in the area of animal behaviour. While sex is, of course, a very basic and intense drive in animals, the fact is that parenting, nesting,"recreation," ordering behaviours and other forms of activity, drive organisms. As in any scientific inquiry, the introduction of the researcher and even the initiation of external interest changes the conditions within phenomenological environment.

Such observation does provide evidence of the shaping of social behaviour occurring within communities of "lower" species. The young are bitten, picked, ignored, shoved, drawn close, "spoken" to, embraced, in reinforcement of random or deliberate behaving. Desmond Morris (Morris, 1977) and others have written about similar basic behaviour in humans. Erving Goffman (Goffman, 1969) pioneered research in the highly complex area of human social behaviour. Julian Jaynes (Jaynes, 1976) suggests that all socialisation was behavioural as opposed to "conscious" in all the millennia through Old Testament and early Homeric time. The world can function very efficiently without consciousness and in fact continues to function with minimal consciousness, Jaynes infers.

"Education" as socialisation occurred prior to self-conscious deliberate establishment of education. Behavioural education occurred as established regularities were necessitated. It is most likely that the established regularities were behaviourally assumed. Such assumptions did not allow for consideration of alternative behaviours which may have existed and which may have been "gospel," *de rigeur* in adjacent clan societies. As society now functions, with individuals living life daily according to regularities socially imprinted in the behavioural activities of individuals, there may be little consciousness of the codified expression of those regularities.

It may be that early *homo sapiens* moved through life with little awareness that particular responses to stimuli were demanded. Only the idiosyncratic behaviour of divergent individuals disturbed the equilibrium. Retribution was swift upon the idiosyncrats and the acceptable condition existed long before the codification of the earliest moral imperatives. The code of Hamurabi codified specific compulsions. "An eye for an eye...." seems, in retrospect, revolutionary, although more likely had been evolutionary.

In ancient times ordering of society undoubtedly was the responsibility of an emergent priest class, shamans, medicine men/women, prophets, elders. Such a priest class assumed the task of monitoring the imperatives with a given society. It was necessary for them to reconcile the social imperatives with metaphorical explanations of phenomena. They coordinated the need for behavioural regulation within the belief system suggested by the explanations. Only gradually did the role of priest class assume the particular function of "teacher" of the behavioural regularities. As consciousness arose with respect to the deliberate seeking after modified behaviour of individuals within the social system coordinate with the intricacies of the belief system, "education" emerged. Charged with the single task of extending the belief system through modifying behaviour of individuals within the society, "teachers" were individual sub-species of the priest class, acolytes, if you will. While the priests assumed responsibility for rationalising the behaviour standards of society, the job of extending the behaviour became the responsibility of the acolyte "teachers." True priests could not de-mystify their role by assuming the task of change agent to the masses. As remains the case to-day, lesser beings undertake the "dirty work" of relieving the generalised populations of responsibility for shaping the particular behaviours of the multitudes. The upper echelons of the priest class assumed the responsibility for the essentially intellectual, if bureaucratic task of curriculum conceptualisation — that is, the delicate task of interpreting the societal myth in terms of particularised behavioural responses to selected initiated stimuli. Enough for the sub-stratum "teachers" to have awareness of the actual stimulus cues and more importantly the rationalised appropriate behavioural responses expected from the initiatives.

Such an evolved process satisfied the base population. It simplified life. Each new generation was relieved of the task of redefining and reordering its behavioural expectations. Further, the burden of maintenance of the various echelons of a priest class was a small price to pay for a ready, convincing and convenient explanation of the phenomena and for the availability of a strategy for dealing with them. Availability of "education"reduces the aggravation factor in societal initiatives. Why else would contemporary society bear the cost of maintaining a burgeoned educational bureaucracy with an accompanying devolved secular/religious establishment prepared to assist in the bothersome task of initiation?

"Families," for the most part, tolerate the burden of teaching certain basic particularised social expectancies. Infants do not enter the world prepared to eat, sleep, and recreate in socially determined sequence and duration. While there may be genetic "clocks" influencing the basic life processes, infants have to "learn" to eat at the convenience of the family, to sleep on schedules adapted to societal life styles and to "play" when appropriate. Would any parent forget the first night his/her child slept through the night, when one parent or the other awakened at daylight, leaped from the bed thinking that the infant had succumbed to crib death, only to find the infant sleeping peacefully in conformity with expectation. Recent studies in sleep research indicate body temperature cycles, light/darkness cycles and geographical time zone factors are crucial in sleep need cases. Yet the deliberate and incidental stimulus interventions of mother/father/family behaviours are certainly crucial to the infant's adjustment.

The wrenching phenomenon of birth constitutes a trauma of highest intensity. The umbilical cord is cut, breath is slapped into the organism, the fluids of biological environment are wiped away, a new definition of class is foisted upon the emerged organism and the race to the ultimate maturity of death is initiated. Eat, sleep, play, work, excrete, respond to schedule, not on organic demand becomes the order of things. Learn the values of the sponsoring social environment is the compulsion. To learn is to modify behaviour in accordance with those values spoken and unspoken, conscious and unconscious, codified and unwritten.

This is not to say that any values are universally held. Even the smallest units of society constitute environments in which priorities of values find some degree of toleration. Priest class moderators have always attempted not only to identify values, but to codify values hierarchically. Even such a value as survival, usually at the core of any concentric family of values, is not universal. Survive, of course, but with reservations. Loyalty to a leader, or a cause, or an order, or a condition, might well *essentially* be of higher priority than survival. In certain faiths pursuing virginity to death is valued above a sullied condition or self-preservation. Such sacrificial behaviour is sanctifiable. Dying for king or country or "faith" is sanctifiable spiritually or secularly. Such conditions, where certain values attain unchallenged priority, are usually related to rationalised systems derived from ideological conceptions and are often unrecognisable from the usually non-rationalised existential/behavioural realities which operate in a given society. Often, societies may have a model of double concentrics existing simultaneously. One is the existential/behavioural, or EB concentric; the second is the essential/ideological, or EI concentric; as illustrated in Figures 1 and 2.

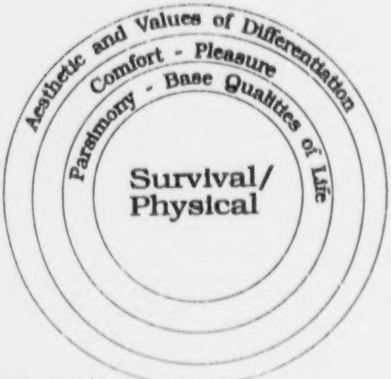
Aesthetic and Values of Differentiation
Comfort - Pleasure
Parsimony - Base Qualities of Life
Survival/
Physical

Figure 1
Existential-Behavioural Concentric

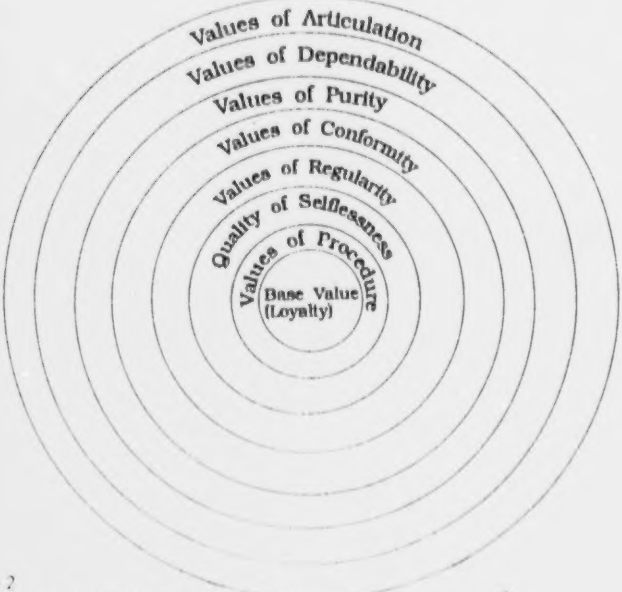

Figure 2
Essential - Ideological Concentric

If one were to enquire about "Where is one?" it would be most helpful to refer to the particulars of the essential/ideological concentric rather than to the existential/ideological concentric rather than to the existential/behavioural. This is not to say that there is an exclusivity of model. There is in addition a temporal condition and a place condition. For example, in the early stages of a radical social change one might observe individuals clamouring to die in battle, to keep a flag from touching the ground, burning at the stake, refusing to recant a principle, or referring to one another as "patriot," or "comrade," or "citizen." One could tell where one was by inquiring about the flag or the principle or the nomenclature. However, if one were to observe individuals frantically engaged in survival behaviour, seeking more comfortable environments, loving or hating one another seemingly randomly, debating the taste and texture of food and clothing, indulging in pleasures of the flesh, one might be nearly anywhere at nearly any time.

Depending on the time and place there would be varying ways of dealing with discrepancies between the dual concentrics. There might be harsh or gentle enforcement. There might be heads lopped off, full jails,burgeoning mental hospitals, the aforementioned burnings, or there might be varying rationalisations of deviance from the essential/ideological concentrics. There might be sophisticated or simple grace procedures. Someone or thing might have "died for your sins" voluntarily or involuntarily. There might be various penances, symbolic or explicit. And, nearly always, there would be guilt. The generation of guilt would seem to be the necessary condition to support the established order.

> You naughty baby, you soiled your diaper
> You traitorous devil, you betrayed your king
> You evil son, you dishonoured your mother
> You weakling, you avoided dying for principle
> You idiot, you over seasoned the souffle

And the consequences:

> Go to jail you are insane
> Apologise to your mother
> I'll slap your bottom
> Take more lessons
> Pay more attention
> Go to the principal's office
> I'll call the police

And the rationalisations:

Daddy will forgive you
God will have forgiven you if you have believed in Him

And the result:
Guilt in any case.

Between the socialisation responsibilities of the family and those of "formal" education in secular or religious institutions sponsored by a broad society, or particular subsets of the society, there of course exist other shaping socialising agencies. Particular "churches" and ethical culture" organisations come quickly to mind. Peer group influentials of all ages exert potent shaping pressure on individuals. Fraternal, political, societal, recreational bodies struggle to impose particularised value pressures. All represent sanctioning units within the environment of individual initiatives to shape them to rather specific conformity. All are powerful and perhaps, in the last analysis, dominant. Yet it is the public schools in the United States, and sponsored schools everywhere, which are the sanctioned institutions of much critical socialisation. It is to be recognised that not all schools are alike in the responsibility. Each large social, political, economic entity wishes to influence the shaping of individual's values within the entity. All seek sanctions and the resultant authority.

Those whose commitment is to collective entities, such as the United Nations or the European Community, would believe passionately that the welfare of personkind would be best served if all children were to attend schools reflecting the world outlook of the organisation. The essential/ideological concentric of such a social organisation would differ dramatically from the essential/ideological concentric of the public school system in Gary, Indiana or of the national school in Clifden, Co. Galway. Ironically, the pool of committed believers in the larger geographic entities is smaller than the total pool in many of the smaller entities. It is obvious that heterogeneity increases with geographic and demographic size; hence consensus is diminished and the essential/ideological concentric is often representative of an idiosyncratic minority whose values and priorities center around pluralistic accommodation rather than passionate singularity. Simply, the larger the entity the more difficult is consensus and authority in the establishment of a national essential/ideological concentric.

In the United States, where historically, there has been a broad national consensus on the worth of "public" education, the essential/ideological concentric has, of necessity been developed around a core of *democracy, freedom, pluralism* and other 18th century, perhaps anarchic, outlooks which may or may not still pertain, if they ever did pertain. It is to be remembered that when public education began in America the population was small, homogeneous, Protestant and most often rural. While the vision and rhetoric of democracy and pluralism have been sustained, the problem of the organisation and maintenance of schools in an evolving heterogeneous society have proved increasingly difficult. In any case, there are those who have claimed that the ideal of public education in America as a *melting pot* has been the sustaining of pure myth (Greer, 1972). One wonders if an essential/ideological concentric could not be imagined, let alone implemented educationally, that would represent a consensus in the schools of the U.S.

The birth of the Catholic school movement in the U.S. during the third decade of this century was in reaction to the unreality of the alleged essential/ideological concentric which was then guiding the public school curriculum. There were two possible conditions.

1. The prevailing concentric of values was hypocritical. It did not represent a core value of democracy/pluralism. The public schools were essentially Protestant/secular in value orientation and had no relationship to the ethos of a Catholic institution; or

2. The public schools were genuinely democratic/pluralistic but it was believed that such a case was an inappropriate ethos in which to "educate" Catholic children. To Catholics the decided core would represent God. To non-Catholics, or to Protestant enthusiasts, such a core would represent loyalty to an established church or radically, to the Pope.

In any event the establishment of schools to serve societal constituencies always serves the purpose of providing an environment within which a rationalised values-concensus might be transmitted parsimoniously, economically and efficiently to a new generation through the implementation of a change strategy (the curriculum) with roots in the rationalised value system of society. Teachers become the agents of change: the school, the environment for change; books,films, charts, blackboards, the media of change.

What has been described is a conception of education as socialisation. Whether the school is established to represent the values-concensus of a large or small entity, there is the intention to operate consciously or preconsciously from the perspective of an essential/ideological concentric of values; one that is rationalised to reflect the particularities of the representative social organisation.

In its purist form, the essential/ideological concentric of a particular society represents what Olaf Stapleton called the "highest imaginings" of a culture. He defined myth:

> a true myth is one which, within the universe of a certain culture (living or dead), expresses richly, and often perhaps tragically, the highest admirations possible within that culture. A false myth is one which either violently transgresses the limits of credibility set by its own cultural matrix, or expresses admirations less developed than those of its culture's best vision (Stapleton, 1968).

The question is whether the behavioural activity of a society ever can represent its essential/ideological concentric or "highest imaginings." There would undoubtedly be, or have been, sanctified individuals who represented the codified EI concentric rather closely. The EI concentric would be constructed on the basis of the upper limits of societal behavioural performance or even on the pure essence of its "highest imaginings." To the modal individual in societal membership, the EI concentric represents an unattainable level of behavioural performance and, in that such concentrics are usually conceived by extraordinary individuals, it is likely that EIs are beyond the level of imagination of the average individual in the society. For the lower than average member of such a society, EI concentrics represent obscured values to be memorised catechismically in fear of faith, or hypocrisy of the highest order. All but the most exceptional individuals function behaviourally on the EB concentric model.

The EI concentrics are influential in that they provide the inspiration for all the metaphoric symbols and explicit iconic representations in the societal environment, i.e. crosses, sickles and hammers, lambs, lions, swords, rakes and shovels, justice balances, etc. These symbols and icons are often omnipresent and yet their literal meaning is scarcely consciously noticed, but continue to provide preconscious and unconscious subliminal cues of societal identification, and to some extent, behaviour. For example, icons may be displayed superficially as identification, but are actually decoratively symbolic of more gross existential/behavioural values.

> I am a Christian. See my cross of 14 carat gold exquisitely fashioned by Cartier jewellers of Fifth Avenue. It costs $300.00 and is the finest of its kind on the market.

Some subtler icons, vital and meaningful to individuals more cognisant of the traditions and explicit symbolism of the essential ideological concentric, such as fish, a basic christian symbol, for example, are worn as adornments by less sophisticated individuals dominantly more EB motivated, totally oblivious of the significance, responding to the design aesthetically.

Societies have probably intended that education reflect the behavioural realities of both the EI and EB concentrics of values scarcely aware of the near impossibility of such a condition. Every statement of educational purpose, since earliest times, reflects the responsibility of schools to effect behavioural change in students across a broad spectrum of behaviours, inclusive of the EI and EB concentrics. The task of teachers facing the reality of the dual concentrics is extremely complex.

The difficulty, of course, is in attempting to understand the relationship between the dual concentrics. It is not simply that the "priest class" curriculum conceptualisers (education professors, education department officials and other influentials) merely impose the EI concentric as a fine-tuned particularised explication of the more basic and natural EB concentric, although to a certain extent that is attempted. For example, to impose one's will by force would seem to be a natural consequence of a primitively cored EB concentric, "I'm going to do it my way." Such self-centered behaviour is in most cases regarded negatively in the "higher imaginings" of the usual EI concentric. However, particularised EI values do refine this nature and quality of enforced will. *Violence to enforce will* is carefully considered and valued. *"Thou shall not kill,"* it might didactically proclaim, except ... in *just war,* or to protect property or other life, or in retribution for misapplication of force in unsanctioned cause.

> Sex, yes, is the rule in the EI concentric if the EB motivation is procreation in the cause of base survival. But sex, no, is the rule if motivation is removed to the third level comfort-pleasure band.

As has been previously suggested, most of the mass/many are not conscious of the conflict extant in the reality of the dual concentrics. Some individuals sense it preconsciously, while in others the condition is entirely unconscious. In the latter case individuals clatter through lives of confusion and at other times sentimentally or blindly in reaction to EI values scarcely understood. Confusion is rampant as social sanctions are applied in overt or covert punishment for breaches. It may be possible that individual miscreants scarcely realise why the sanctions are imposed. There is no guild, perhaps reconciliation. Their reaction would be to scarcely realise they had sinned, but to accept that they probably deserved punishment. Other individuals, with preconscious sensitivity to the conflict of the duality, may come to consciousness after the imposition of sanctions, guilt resulting.

Teachers being, oddly enough, as human as everyone else, face the duality more punishingly. They need confront the condition in their own experience, consciously, preconsciously or unconsciously. They must also face it in dealing with children (students). They must carefully consider their charge. Are they to dispassionately impose the standards of ill defined EI concentric values on their students or are they responsible to understand, tolerate, or modify EB driven behaviours in pupils? Must teachers attempt to distinguish between EB and EI motivations in each of their students and perhaps attempt to help raise consciousness in them towards resolution of the conflict induced anguish suffered by all of the children and in reality, by all of us?

It stands to reason that we cannot secure a discrete place in the curriculum for such an ill defined "subject." It might be not so humbly suggested that contemporary "priest class" curriculum agents might scarcely understand what the problem is.

After all, such a "subject" would be difficult to examine for the junior certificate or in its EI concentric purity, the learning certificate for that matter.

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IDEOLOGICAL CONFLICT AND HISTORICAL INTERPRETATION: THE PROBLEM OF HISTORY IN IRISH PRIMARY EDUCATION c1900-1930

A.S. Mac Shamhráin

Introduction

The alleged role of nationalist-inspired history teaching as a motive factor in the growth of Irish revolutionary separatism during the late 19th and early 20th century, has been critically examined by several commentators in recent years. A degree of consensus may be observed, whereby history texts are viewed as reflectors of socio-political change rather than as catalysts, the change being brought about by a much wider range of influences.[1]

However, the fact remains that the Protestant and unionist communities, apprehensive at the prospect of Irish independence, firmly braced themselves for what they perceived as a cultural assault. Thus they loudly voiced their anxiety at the promotion of a nationalist interpretation of history in schools. The present paper examines the ideological conflict generated by the adoption of an apologetic Irish school history, in a situation where the diverging world views of nationalists and unionists gave rise to conflicting concepts of patriotism. It considers the Protestant response to the propagation of the nationalist myth, explores the likely impact of historical views on political activity and contemplates the likely role of school histories in the formation of such views.

An "Irish" History for Irish Schools : Diverging Patriotic Traditions

As demands to introduce the teaching of Irish history steadily increased in the early years of the century the British Establishment, including the Board of Commissioners for National Education, felt a distinct sense of unease. The principal source of the demand and the motivation behind it were all too clear. For Conradh na Gaeilge, the campaign seemed a logical extension of an attack on what they viewed as the "anti-national imperial ethos" of Irish schools. For too long, the National Schools had pursued an Anglocentric curriculum which ignored Irish heritage and history. However, to Resident Commissioner William F.Starkie, who personally appreciated the value of an historical education, the introduction of a distinctively Irish history represented a Pandora's box. Nationalist interests, represented by Eoin Mac Néill, Pádraig Pearse and Fr. Patrick Dineen stressed that the purpose of history, as they understood it, was to inspire national pride and spirit.[2] Dineen argued that "a genuine knowledge of our motherland ... alone can impart the warmth of patriotic feeling".[3]

It was this very emphasis on the potential of history to inculcate patriotism, especially in the young, that caused such concern to the Commissioners for National Education. Indeed enrolment of the discipline of history in the cause of patriotism was not unique to the Irish situation. Most European countries, including England, possessed apologetic pre-critical histories, which were exploited to varying degrees for this express purpose, especially in the years prior to the First World War.[4]

In Ireland, however, there were two established patriotic traditions: one "Gaelic", predominantly Catholic and nationalist, the other "Anglo-Irish," predominantly Protestant and often, but not necessarily, unionist. There is a marked divergence between the world views arising from these two traditions, as analysed by D.G. Pringle. Essentially, the former view looks back to a "golden age" in the Gaelic past, which may be restored through national liberation. The latter looks forward to future progress and prosperity achievable through the link with Britain. These views, reinforced by the historical experience of the respective communities, lead to perspectives whereby:

> Nationalist historians reinterpreted history in terms of the heroic struggle of the Irish people against foreign invaders, whereas Unionist historians interpreted history in terms of the beneficial effects of British civilisation.[5]

Given the conflicting world views of the two communities, it is clear that any effort to introduce the teaching of Irish history with the underlying aim of fostering patriotism should have run into difficulties. The problem, in essence, was that their respective interpretations of patriotism were at variance. Hence, May Starkie, wife of the Resident Commissioner, in stressing Ireland's overseas achievements in missionary, cultural and military matters, could infer that the

Irish Guards at Mons and the Innis killings at Tripoli were emulating the deeds of the Celtic heroes,[6] a view that would hardly have found widespread acceptance in nationalist circles!

In the matter of interpretation, ideological conflict was less evident regarding the early period of Irish history in pre-independence years. The traditional account of early policy, which represented Ireland as a monarchy ruled from Tara, was generally accepted as historical. All schools of thought represented the period 790-1014 as a single block, at the end of which pagan-Norse aspirations of conquest were thwarted and all pictured Diarmuid Mac Murchada as treacherous in his dealings, despite conflicting views of the outcome for Ireland of the Norman Invasion. Divergence of interpretation was more evident in regard to the religiously motivated wars of the seventeenth century, the Penal Laws, the pre-Union Parliament and the political movements against the Union from the mid-nineteenth century onwards.

For their part, the Commissioners sought to defuse a potential conflict situation by stressing the civic aspect of history; its role in the development of character and good judgement.[7] They also promoted textbooks by historians from a moderate "Home Rule" school of thought. A case in point was Patrick Weston Joyce. Formerly principal of Marlborough Street,Training College, Joyce was the author of several books on Irish antiquities and toponymics approved in earlier years for use in the National School system. A Catholic with established Castle connections, Joyce is known to have been a friend of Starkie. Yet it must be stressed that his acceptability to the Commissioners owed more in fact to his considerable scholarly reputation.[8] Indeed, his handling of the early period of Irish history was competent, allowing for the above-mentioned traditional positions. Moreover, his presentation of the period from the 17th to the 19th centuries, critical to Anglo-Irish relations, is quite dispassionate and objective. The tradition to which Joyce belonged aimed to steer a course between the nationalist and unionist poles; applauding Grattan's Parliament, economic nationalism and the native tradition, while acknowledging the achievement of the Anglo-Irish and upholding the authenticity of their Irish identity.[9]

Nationalist Tradition and School History: Propounding a Myth

In the early years of the century, schools outside the control of the Commissioners, especially those of the Christian Brothers, introduced a range of historical readers and textbooks more emphatically nationalist in character.

This particular genre of textbook has certain identifiable common themes. Essentially, they are pro-Catholic, anti-English and tend to suppress anything remotely critical of Catholic Ireland.[10] The books in question would include the *Historical Class Book* of Br. Thomas J. Wiseman, in its twelfth edition by 1909, and Br. J.M. O'Brien's *Irish History Reader*, which appeared in 1905. Both publications emphasised the sufferings of the Irish population from early times - subjected to conquest and persecution by the Norsemen, Normans and English in turn. The strong pro-Catholic bias, however, is most evident in discussing the sensitive topics of the Reformation, the seventeenth century wars and the Penal Laws. Far from attempting to place the Reformation in its context or acknowledge the decline within the Late Medieval Church that it sought to rectify, the *History Reader* trivialises its causes and attributes the entire episode to a whim of Henry VIII. In recounting the events of the following two centuries, English atrocities are dwelt upon while any suggestion of Irish aggression is dismissed.[11] Of no less significance is the prefixed exhortation to teachers on the importance of education for patriotism, and the appended emotional appeal to pupils to unite in "the cause of Faith and Fatherland."[12]

In the years immediately preceding independence, a new historiography of early Ireland was shaped by Eoin Mac Néill, by then professor of Early and Medieval Irish History at University College Dublin. Although he was undoubtedly the person best equipped to have written a popular synthesis of the period, he left that task to Alice Stopford Green, his "most prominent, vocal disciple".[13] The latter, lacking in historical criticism and ill-acquainted with the primary sources, produced her own distillation of Mac Néill's work. The colourful synthesis of the Early and Medieval periods which resulted, has been described as "formidable propaganda for the Nationalist cause."[14] Indeed, the new nationalist view of Irish history which emerged in the years immediately following independence owed much to Stopford Green's contribution. More than earlier interpretations, it stressed the Gaelic heritage as the cultural basis for Irish nationalism and focused on the (unhistorical) image of a Tara-centred national monarchy, enshrining the essence of the popular nationalist assumption that there was in fact a precedent for a unitary Irish state. It may be noted that the work of Mrs. Green had considerable impact on the teacher training programme in the emergent years of the Irish state. Her book, *The Irish National Tradition* was prescribed for the Easter Examinations in 1924 and was under consideration for use on the training college courses. Within a few years another of her books, *Irish Nationality*, had been translated into Irish for use in the preparatory colleges.[15]

Mrs. Green also produced a series of school readers which appeared on the Department of Education approved list for 1926.[16] The series does not appear to have achieved very widespread circulation, despite efforts on the author's part to promote sales to Christian Brothers and Convent schools and to the Northern Ireland Ministry for Education.[17]

The immediate post-independence years witnessed the full flowering of an Irish nationalist myth in which the Gaelic and Catholic identities became increasingly entwined. Ireland was viewed as an island monarchy which, having survived persecution for its Catholic faith (sic) at the hands of the Norsemen was foully betrayed and conquered by the English in 1169. From that point, the course of Irish history was presented as a protracted seven-hundred year conflict, in which the crisis of 1916-21 was "but the latest phase of the struggle for Faith and Fatherland." Moreover, the establishment of a Gaelic, Catholic state became the goal towards which Irish history had been moving for seven centuries.[18]

Ultimately it was the Catholic-Nationalist view of history, more so than the Gaelic, that would have the most detrimental long-term effect. Indeed this interpretation of Irish history was promulgated until fairly recent years.[19]

Protestant Response: Alternative Perspective and Polemic

For the most part, the diverging world views of the respective communities explain the growing Protestant unease, as nationalist interpretations of history took precedence in the elementary schools. As noted above, the Gaelic component of nationalist historical tradition was not the main contributor to Protestant anxiety. Indeed, during the late 19th century, Protestant and unionist clergy and laity played a prominent role in the Gaelic cultural revival, while various unionist bodies enacted resolutions in support of the Irish language.[20] This, needless to remark, was before Irish cultural heritage became tagged with the "political" or "sectarian" labels, which have since rendered it unattractive to the unionists as a body.[21]

Of more immediate concern was the religious dimension of nationalist history, the strident Catholic triumphalism which the Protestants feared not because of any theological difference, but because of its implications for national loyalty. Religious identity was viewed as a "substantive motivator" which effectively "defined and moulded political and social attitudes."[22] More than any other factor this Catholic nationalism was seen as a potential threat to the political and cultural future of the Protestant community.

For the most part, it was a perceived acceleration in this trend of "politico-sectarian" history teaching after 1908, that prompted Protestant educationalists to voice concern. In these circumstances, with teachers clearly anxious regarding the tone of available textbooks, Dr. Henry Kingsmill Moore, principal of the Church of Ireland Training College, produced a reader to meet the needs of Protestant schools.[23]

Examination of Kingsmill Moore's book shows it to be more dispassionate and better balanced than many of the Catholic-nationalist productions, aside from those in the Joyce mould. The heritage of Celtic Ireland is well represented; he gives extensive coverage to the cultural achievement and political development of the Early and Medieval period, which he handles competently and critically.[24] The main achievement of the work, however, lies in its largely successful attempt to provide an alternative and non-contentious account of the major issues of religious controversy.

Understandably, the problem of the Reformation is approached with care and placed in the context of an ongoing cycle of reform within the Medieval Christian Church. However, it is in covering the events of the 17th and 18th centuries that Kingsmill Moore shows his dispassionate approach most clearly, apportioning credit and blame to both sides in equal measure. He documents several "English mistakes" and is critical of the methods used to secure the Act of Union. Only in dealing with the then contemporary issue of Home Rule does Moore betray his own political sympathies. Apparently he did not see the point of breaking away from Westminster, given the on-going pattern of Conservative government reforms.[25]

The concern of Protestant educationalists was little eased by merely providing an alternative historical perspective for their own schools, while pro-Catholic nationalism continued to gain ground elsewhere, especially with the advent of independence. In 1922, Kingsmill Moore and Archbishop John Gregg of Dublin visited Eoin Mac Neill, then Minister for Education, to protest at the widespread use of biased textbooks.[26] The latter received them cordially, but progress in this sensitive matter was destined to be very slow. Four years later, Moore's *Irish History* was on the Department of Education Approved list, along with other standard works.

Meanwhile, a more direct attack on Nationalist interpretations of history and their presumed political consequences was launched by certain unionist politicians and media commentators.[27] The Rev. William Corkey singled out the Christian Brothers' *Irish History Reader* as "by far the most seditious" of the nationalist textbooks, with its biased accounts of the 17th and 18th century conflicts.[28] Corkey was quite emphatic in blaming the teaching of history in the National Schools for the abusive attitudes of working youths towards Protestant farmers as "English invaders that must be rooted out" and for the extensive participation by youths in the 1916 Rising.[29]

There is no doubting the reality of the anxiety experienced by the Protestant and unionist communities throughout Ireland with the advent of independence. For the Protestants of the South, many of whom had supported the British war effort and opposed the Rebellion, there was a stark sense of increasing isolation. Hence, although guaranteed physical safety by the new government and accorded full religious tolerance, Southern Protestants felt under threat as a cultural group.[30]

It is equally clear that their sense of unease was intensified by their perception of how history was taught, especially in primary schools. On this account, George Russell felt impelled to argue that "Irish history was a history of complexity" and that "war to the death between the (two) cultures would destroy civilisation in every part of the island".[31] Nor was Protestant anxiety in this regard derived solely from any subjective assessment of the tone of textbooks: in the early years of the new state, both the Irish National Teachers Organisation and the Department of Education, were perceived as supporting a nationalist interpretation of history and with stressing "the resistance of that (Gaelic) race... for a thousand years to foreign domination."[32] More pointed, perhaps, were the arguments expressed by Fr. Timothy Corcoran S.J., professor of education at University College Dublin and co-editor of the *Catholic Bulletin*. The latter stressed the integral nature of the phrase "Catholic history" and urged the necessity for a "linkage of Irish history with Catholic history rather than with European."[33]

The claim that biased interpretations of Ireland's past may have fostered nationalist hostility towards the Protestant community would appear to have a certain validity. Professor F.X. Martin O.S.A. argued some years ago that historical myths have "sent young men out to die more certainly than did the 'Cathleen Ni Houlihan' of Yeats."[34] The question of a link between interpretations of the past and Republican revolutionary action thus finds some support.

Views of History, School Textbooks and Polarisation

The influence of views of history on action is, however, a complex matter. Carl Becker, the American philosopher of history, maintained that "everyman's ideas about politics and society and consequently his actions are partly determined by his picture of the past," adding that "it may be a faulty picture."[35] A similar view was expressed by Canadian epistemologist and theologian Bernard Lonergan. In a lecture delivered at the Thomas More Institute, Montreal, on 23 September 1960, he argued that past memory (from which existential history is created) is "a constitutive determinant of how one behaves."[36]

The difficulty, however, is ascertaining the extent to which textbooks or techniques of teaching are responsible for the formation of views of history. Divergence between the approved curriculum and its implementation is not unknown. Teachers are free to accept or reject directions on how to approach the teaching of a subject and may support or refute the contents of a textbook in class. On the other hand, pupils are not automatons and will respond to teaching in different ways. Even in instances where a concentrated effort is made to inculcate a certain view of history, some may embrace it for life and some for the duration of a class, while others may dismiss it out of hand.

Clearly, other factors are at work in the formation of views of history. Coldrey, with reference to the alleged political influence of the Christian Brothers, argues that they are "part of a socialisation process" in which the central agency is the home.[37] Within the greater community, political and religious ideas are diffused through a range of sources, including newspapers, political rhetoric, club activities, ballads, sermons and popular literature.[38] Clerics like Fr. D. Dineen of Charleville Co. Cork, were at hand to stress the "providential" relationship between patriotism and the Catholic Faith. In a paper read at Maynooth Union in 1915, Dineen emphasised the role of the home in inculcating patriotism. He recalled how many a child had been sent to bed "with tears streaming from his eyes and the impassioned threnody of Davis ringing in his heart," from a family reading and discussion of Sullivan's *The Story of Ireland*.[39] This work, originally written in 1867 for general readership, ran to over thirty editions. Containing emotionally charged and markedly biased accounts of the 17th century religious conflicts and acclaiming every gesture of rebellion through the years, the general tone of the book was

Anglophobic and sectarian in the extreme.[40] A revised edition having been produced for school use in 1907, it was still recommended as background reading for teachers twenty years later.[41] However, its greatest impact was probably in the home, its popularity as a "family history book" extending over several generations.

The arguments of recent commentators seem therefore sustainable: that the influence of school textbooks and of teaching can be overstated and that syllabi reflect rather than create the values of the society that produces them.[42] However, in a composite community, where two overlapping religious and patriotic traditions had generated diverging views of history, the "official" propagation of one group's myths at the expense of the other could have far reaching implications. The real effect of textbooks in inculcating a certain view becomes irrelevant in a situation where perception is reality. The impact of nationalist teaching (as distinct from a community view of history) on revolutionary action might be questioned, but to the Protestant community of c.1920, apprehensive about their political and cultural future, a causal relationship seemed certain.

Perhaps the most tragic aspect of the myth-building nationalist school histories of this era, was that they further reduced the prospects of achieving a compromise on the issue of national identity. In the new Northern Ireland state, an antipathy towards the teaching of Irish history was retained and developed by an insecure Unionist Establishment, deeply suspicious of nationalist intent. In the wake of the Lynn report of 1922, the Northern Department of Education sought to regulate textbooks in Catholic schools and dropped Irish history entirely from the curriculum of state schools.[43] This policy has almost certainly contributed to a lack of mutual understanding between the two communities of Northern Ireland and further widened the rift between North and South. Yet, if the approach to teaching Irish history had been more balanced and had generated less contention in the years preceding Independence, unionist response may have been different.

Conclusion

Faced with pressure to include Irish history on the school curriculum, yet conscious of the conflicting world views of Ireland's politico-religious divisions, the Commissioners for National Education sought to steer a middle course between the nationalist and unionist poles. Nonetheless, in the years preceding independence, an apologetic nationalist history with strong pro-

Catholic and anti-English undertones gained currency, especially in Christian Brothers' schools and in others outside the Commissioners' control. Adoption of the revived Gaelic heritage as a cultural basis for Irish nationalism, already distinguished by a marked Catholic identity, underlay a popular view of Irish history as a seven hundred year struggle for Faith and Fatherland, with the establishment of a (unitary) Gaelic, Catholic state as the end-goal.

With the advent of independence, the Protestant and unionist communities, both North and South, felt their cultural identities were under threat. Their general sense of unease was intensified by their perception of how history was taught. Not only school textbooks, but the Department of Education, teacher training institutions and teachers' organisations seemed to support a Gaelic-Catholic-nationalist view of history. Protestant anxiety finds expression in the temperate arguments of Kingsmill Moore and George Russell, and in hard-hitting polemics such as that of William Corkey.

Whatever the arguments for considering views of history as matrices for political thought and action, it seems valid to argue that the role of the school in the diffusion process of politico-religious ideas has been exaggerated. Nonetheless, the fact remains that the teaching of Irish history was *perceived* by the Protestant and unionist communities as a threat to their interests, and this has had far-reaching consequences for Northern Ireland.

In retrospect, most will acknowledge that there was a need for an "Irish history", presenting a perspective generated from an Irish world view. Nonetheless, it seems reasonable to expect that an all-encompassing Irish history could have been produced, capable of inspiring a sense of common identity rather than further polarising attitudes. One is left with an unavoidable impression that, at such a crucial juncture, the opportunity to do so was lost.

FOOTNOTES

1. Patrick Callan, "Aspects of the Transmission of History in Ireland during the Latter Half of the Nineteenth Century," *Irish Educational Studies*, 6 No. 2 (1986-87), 66; Lorcan Walsh, "Nationalism in the Textbooks of the Christian Brothers," *Irish Educational Studies*, 6 No. 2 (1986-87), 11; Barry M. Coldrey, *Faith and Fatherland: The Christian Brothers and the Development of Irish Nationalism 1838-1921*, (Dublin : Gill and Macmillan, 1988), esp. pp.128-130, 139.

2. John M. Coolahan,"A Study of Curricular Policy for the Primary and Secondary Schools of Ireland 1900-1935," unpublished PhD. Thesis, University of Dublin 1973, esp. p.166-168; Anthony Motherway, "Curriculum Development: The History Curriculum of the Primary School, 1922-82," unpublished M.Ed. Thesis, University of Dublin, 1982, p.19-20, 46-9; Patrick Pearse, "An Educational Programme;" Idem, "The Primary Schools," *An Claidheamh Soluis* (7 November 1903, 20 August 1904) in S. P. Ó Buachalla (ed), *A Significant Irish Educationalist : The Educational Writings of P.H. Pearse*, (Dublin and Cork : Mercier Press, 1980), pp.10, 52.

3. Patrick Dineen, *Native History in Irish Schools*, (Dublin: M.H. Gill, 1905), p.14.

4. Valerie E. Chancellor, *History for their Masters : Opinion in the English History Textbook 1800-1914*, (Bath : Adams and Dart, 1970), p.47; Ibid. pp.113,118,121,124, illustrates how encouragement of patriotism frequently descended into xenophobia.

5. Denis G. Pringle, *One Island, Two Nations : A Political Geographical Analysis of the National Conflict in Ireland* (Letchworth, Herts.: Research Studies Press Ltd., 1985) p.213.

6. May C. Starkie, *What is Patriotism? : The Teaching of Patriotism*, (Dublin : Commissioners of National Education, [1916]), pp.7, 8.

7. Office of National Education, *Notes for Teachers in Connection with the Programmes of Instruction for National Schools*, (Dublin : Office of National Education, 1913), p.12.

8. Patrick Weston Joyce, *A Concise History of Ireland*, (new ed) (London : Longmans, [1909]), esp.pp.196-197, 212-220, 226f, 260ff, 280-285, 294, 301ff. The late Professor R. Dudley Edwards (private interview 30 April 1986) referred to Joyce's Castle connections, but emphasised the esteem in which the latter was held as a scholar. His apparent shortcomings, especially in presenting a critical picture of Ireland's early history, Professor Edwards stressed, must be viewed in the context of the Irish historiography of that time.

9. G.C. Bolton, "The Anglo-Irish and the Historians 1830-1980," in *Irish Culture and Nationalism*, (ed) O. MacDonagh et al (London and Canberra : Macmillan Press Ltd., 1983), p.248.

10. B.M. Coldrey, *Faith and Fatherland*, p.62; cf. L. Walsh, "Nationalism in the Textbooks," 7, where inclusion of a strong sense of grievance is noted.

11. The Christian Brothers, *Irish History Reader* (Dublin : M.H. Gill; London : Burns and Oates, 1905), pp.145-147, 193, 219-220, 240.

12. Ibid. pp.339-240; cf L. Walsh, "Nationalism in Textbooks," 9; B. Coldrey, *Faith and Fatherland*, p.122-3.

13. Francis John Byrne, "MacNeill the Historian," in *The Scholar Revolutionary: Eoin MacNéill 1867-1945* (Shannon : Irish University Press, 1973) (ed). F.X. Martin and F.J. Byrne, pp.31-32, 34. Professor Byrne (private interview 1 July 1988) enlarged on this point indicating that, in later years, Mrs. Green became a source of considerable embarrassment to MacNéill.

14. Robert Brendan McDowell, *Alice Stopford Green : A Passionate Historian* (Dublin : Allen Figgis and Co., 1967) p.82f.

15. Seosamh Ó Néill to Alice Stopford Green 13 March 1924; Seán McLellan to A.S.G. 12 December 1928, Alice Stopford Green Papers, M.S. 15126(i), National Library of Ireland.

16. An Roinn Oideachais, *List of Books Approved for Use in National Schools for the School Year 1926-7*. (Dublin : Oifig an tSoláthair, 1926), pp.13, 27.

17. Pádraig Ó Brolcháin to A.S.G. 25 March 1927; MacMillan Ltd. to A.S.G. 28 March 1927; A.S.G. to MacMillan Ltd. 22 April 1927; A S G Papers MS 15126(i-iii), National Library of Ireland.

18. F.X. Martin, "1916: Myth, Fact and Mystery," *Studia Hibernica* 7(1967), 9, 19; cf James C. Beckett, *The Study of Irish History* (Belfast : The Queen's University, 1963), p.8.

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PART-TIME MATURE STUDENTS IN HIGHER EDUCATION : A CASE STUDY

Marie Morrissey and Declan G. Irvine

Introduction

There is almost universal recognition to-day that initial education and training is no longer sufficient to equip us for our roles in society. The demands of modern society make it imperative that opportunities be provided which will give people the opportunity to "up-date" their knowledge and skills so that they can cope more effectively with the challenges posed by social, economic and cultural changes. There is an increased awareness among adults themselves that their education and training has not been completed, and that as the need arises they must continue to learn. Increased participation by adults in education and training has led to demands that adequate educational and training opportunities be provided on a part-time basis for mature students.

To date, there is a dearth of information on part-time mature students who pursue undergraduate degree courses in Ireland. This study was undertaken therefore, (a) to examine the position of part-time mature students in Irish Universities, (b) to profile these students and (c) to identify factors affecting their participation. It is based on surveys of students and staff who were involved in the B.A. part-time degree course during the period 1984-1988 at University College, Galway.

What is a mature student?

In the three constituent colleges of the National University of Ireland (N.U.I.) at Cork, Dublin and Galway, a mature student must be 24 years of age or more at the date of entry. In the Dublin City University and the University of Limerick, mature students are those aged 23 years or more at entry.

Age:
A survey by Woodley et al (1987)[1] found that about 60% of mature students at English polytechnics and almost 70% of those at universities were under 30 years of age. A more recent study by Bourner (1988)[2] on part-time

undergraduates on the Council for National Academic Awards courses in Britain, showed that the median age was 30.

Gender

In a study of adult students in two Irish counties, Daly (1980)[3] found that women students out-numbered men in the ratio of 2:1 and the *Kenny Report on Adult Education* (1984)[4] found that females had a higher representation in adult education than males. However, a study by McKeogh (1989)[5] in which the type of course was considered, found that only one-fifth of those registered for a part-time Information Technology degree course were women.

Social Class:

It has also been shown that adult participation in courses is related to social class. The findings from the *Murphy Report on Adult Education* (1973)[6] revealed that adults who participated in courses were members of the upper socio-economic groups, while the *Kenny Report* (1984)[7] confirmed that middle class people were more likely to participate in adult education than working class people.

Educational background:

Closely allied with social class is the educational background of participants. In a study of adults who attended a part-time Social Action Diploma Course, Garvey (1980)[8] found that 42% had received a third level education, while MacDonald (1983)[9] reported that on entry of adults into undergraduate courses at Glasgow University, one-fifth of men and about one-third of women held professional qualifications.

Examination performance:

Sanders (1961)[10] in his Australian study, came to the conclusion that the maturity associated with increasing age and experience was a positive predictor of success for some arts and social science courses. Bourner (1988)[11] showed that a higher proportion of part-time than full-time students on the Council for National Academic Award courses were awarded "commendations." In almost half the subjects, the proportion of commendations awarded to the adult part-time students exceeded the proportion of commendations awarded to the full-time students by a ratio of more than 3:1. Reasons advanced to account for the higher levels achieved by mature students centre on two factors, namely higher motivation and greater maturity.

Provision of degree courses for adults:

Several reports refer to the need to provide relevant degree courses for mature students. The *Commission on Higher Education Report* (1967)[12] stated:

> ....that the needs of those who are prevented by circumstances from attending courses of higher education at the usual age should receive special consideration in their later years when these circumstances might no longer be an obstacle.

This same report made reference to the inadequacy of provision for part-time courses for adults. The *Commission on Higher Education* favoured provision by agencies other than the University to meet adult needs and regarded adult education as being marginal to the main task of the University. It was recommended[13] that the New Colleges (other third level colleges providing scientific, commercial and humanistic programmes) might offer a fresh approach to the question of part-time courses in higher education, and provide a form of higher education somewhat different from the traditional form of university education and no less excellent of its kind.

In 1973, the *Murphy Report*[14] expressed the view that "an urgent consideration for all institutes of higher education was how to respond adequately to the demands by adults for evening courses leading to professional qualifications." This Report perceived two main obstacles to the emergence of a satisfactory solution to "this urgent adult education need," a lack of finance and a reluctance on the part of some institutes of higher education to grant recognition for courses. It recommended that institutes of higher education extend their services to provide for the increasing demand for evening courses leading to an award.

There were two further recommendations in 1984. The *Government's Programme for Action in Education 1984-1987*,[15] and the *Kenny Report*[16] proposed that evening degree courses be made more widely available and that institutions should adopt new approaches to facilitate greater participation in part-time day and evening courses, such as modular credit systems, accreditation for experience and credit transfer between institutions. Clancy in his 1979[17] and 1982[18] reports made brief reference to part-time courses and stressed the need for second chance education. In his most recent publication (1988),[19] he was still critical of the inadequacy of part-time provision and stated:

> ....the part-time higher education sector is underdeveloped and, indeed, undervalued in Ireland. This reflects a serious structural imbalance in the higher education system.

Provision of part-time undergraduate degree courses in Ireland

Several types of part-time undergraduate degree courses are available in the University sector. University College Dublin and Galway offer Bachelor of Arts and Commerce degree courses on a cyclical basis. University College Cork provides a Bachelor of Arts and Law courses and in October 1990, introduced a Bachelor of Business Studies degree (and diploma) programme.

Since their foundation, the two former National Institutions of Higher Education have continued to extend their range of part-time courses. The Dublin City University offers two part-time degree courses, a Bachelor of Business Studies and Bachelor of Science in Computer Applications, while the University of Limerick provides a Bachelor of Business Studies degree. In addition, these institutions in conjunction with regional centres, have developed distance education as an important element in their commitment to adult education and offer an integrated series of modular courses leading to qualification

The most recent development in distance adult education is the availability of Open University degree courses from 1991. This system will be administered by the Distance Education Department of Dublin City University, although initially, only degree courses in mathematics and technology will be available.

Differences exist in the enrolment trends by part-time mature students in the different third level colleges. In the N.U.I. colleges, the number of students registering for each cycle and completing Arts degrees has declined since the early 1980s. In contrast, both the University of Limerick and Dublin City University have an increasing number of part-time mature students enrolling on their courses.

Part-time Degree Course at University College, Galway (1984-1988)

The fifth cycle of this course commenced at U.C.G. in 1984 and extended over a period of four years of evening and week-end work. A total of 184 students registered for the course and 86 members of the colleges teaching staff participated at various stages during the course. Fifteen subjects were offered, and students had to select four subjects for the First Arts course (taken over two years), and two for Second and Third Arts. Tutorial and language classes were arranged in ten subjects. University examinations were held in the Summer and Autumn, and students were required to pass the examination as a whole before being allowed to register for the following year of the course.

Methodology of the Present Surveys

In 1989, three surveys were conducted to ascertain the attitudes and experiences of those who had been involved in the 1984-1988 Evening B.A. Course. Three sub-groups were targeted for this enquiry:

(i) those who graduated in 1988;
(ii) those who did not complete the four year course (drop-outs);
(iii) the staff who taught on this course.

Three questionnaires, one for each of the sub-groups were designed, pre-tested and distributed.

The purpose of the questionnaires to graduates and drop-outs was to gather relevant information on their general characteristics, educational backgrounds, course experiences and to attempt to identify the factors which were linked to course completion or withdrawal. The purpose of the questionnaire administered to the staff was to gather data on their experiences of and attitudes to part-time mature undergraduates and the B.A. evening degree course itself.

The total number of responses to the three questionnaires were as follows:

Questionnaire	Number Distributed	Number of Responses	%
Graduates	129	70	54
Drop-outs	48	11	20
Staff	86	50	58

Survey Findings

1. Graduates

(a) Sex, age and status of the respondents

Over half the graduate respondents were female (54%). There was a greater representation of married people on the course (57%). Over half (53%) of the graduate respondents were in the 30-39 age group. Almost half (45%)

had no children and 32% had children under ten years of age. Teachers, clerical and technical workers and those in other professions comprised 69% of the respondents, while manual workers, farmers and the unemployed were under-represented.

(b) Educational background

Regarding the educational background of the graduate respondents, almost all (99%) had received a second level education, 71% attended a secondary school and over three quarters (78%) left school at age 17 or over. Almost three quarters (72%) had obtained the Leaving Certificate Examination, 9% had a Group Certificate and only 6% had no certificate. Over half (61%) had previously attended a third level college and were certificate, diploma or degree holders.

(c) Entrance qualifications

On entry, 42% of the graduate respondents had two or more honours in the Leaving Certificate Examination and 58% entered on the basis of mature years.

(d) Motivational factors

The major motivational factors for the graduates enrolling on the course were:

(i) a sense of underachievement (31%);
(ii) self-fulfilment (30%);
(iii) interest in subject(s) (19%);
(iv) always intended undertaking a degree but delayed doing so (20%).

A change of job or promotion did not rate highly in the list of sixteen motivational factors for embarking on a degree-course.

(e) Factors related to employment

Over three quarters (82%) of the graduate respondents were in full-time employment, 5% were employed part-time, 6% self-employed and 7% were unemployed.

Regarding the attitude of employers, 63% experienced an employer who had an encouraging attitude to their participation in the course, while 37% had an employer who was discouraging or uninterested in the course. A third had full fees paid by their employer and 32% received a loan. Some paid study leave was granted, and holiday leave prior to examinations, was taken by 70%. While the attitude of some employers may have been encouraging, there were few work-related incentives on completion of the courses as over half (60%) obtained no financial gain or promotion on completion of the course.

(f) Examination performance

In the First Arts Examination, over three quarters (87%) of the graduate respondents passed their examination on the first attempt. The success of the students increased in the Second Arts Examination with 91% passing on first attempt, and in the B.A. Degree Examination, 97% passed on first attempt. 75% of the responcents stated they would have liked to have pursued an honours degree course, had it been available to them.

Only 7% of the graduate respondents had terminated their education at the statutory school leaving age of 15 or earlier. The purpose of Table 1, is to illustrate the capabilities, motivation and performance of three graduate respondents who were given the opportunity to continue their education.

TABLE 1. University Examination Performance of Three Students by Duration of Formal Schooling and Standards Achieved

Sex	Marital Status	Age Group	Occupational Category	Age left School	Highest Examination Obtained	University Examination Results
Male	Married	50 - 59	Farming/ Agriculture	14	O Levels	Passed all exams on first attempt
Female	Married	40 - 49	Supervisory/ Clerical	14	None	Passed all exams on first attempt
Female	Married	30 - 39	Manual	15	Intermediate Certificate	Passed all exams on first attempt

(g) Reaction to the demands of the course

Having experienced four years at U.C.G., the graduates were asked how demanding they found the course. Exactly half found the course "demanding," a quarter "very demanding" and a further quarter "not too demanding."

(h) Satisfaction

Almost three quarters (73%) felt that enrolling as a mature student was an advantage on the course. Going to U.C.G. was a "very worthwhile" experience for 64%, it was a "worthwhile" experience for 33% and only 3% regarded the experience as a "disappointment."

(i) Further study

Information was sought regarding what courses, if any, the graduates became involved in after graduation. Over a quarter (29%) of the graduate respondents who continued with their studies were pursuing a Masters Degree or Qualifier, 17% the Higher Diploma in Education, 7% other degree courses and 47% were participating in diploma or short courses.

2. Drop-out Students

Only 11 of the drop-out students responded. Addresses given to U.C.G. at the time of registration in 1984 were used and there was a possibility that some of the drop-outs may have changed addresses since registering. From the poor response by the drop-outs, it is impossible to produce any reliable results from this survey, but a summary of the main findings are as follows:

(a) Sex, age and status of the respondents

Of those who did not complete the course, males predominated and 64% were single. The average ages of the drop-outs ranged from 24-39 and 86% had no children. Almost half (45%) were in supervisory/clerical posts.

(b) Educational background

Almost three-quarters (73%) of the drop-out respondents had attended a secondary school, 45% left school at age 18 or over and 80% had obtained the Leaving Certificate Examination. 73% had previously attended a third level institute and 50% completed their course of study. Exactly a quarter possessed a third level course of study. Exactly a quarter possessed a third level certificate and a further 25% gained a diploma or degree.

(c) Motivational factors

The major motivational factors for the drop-outs enrolling on the course were:

(i) a sense of underachievement (27%);
(ii) gain a qualification (36%);
(iii) self-fulfilment (27%);
(iv) leisure time activity (37%).

(d) *Factors related to employment*

All the drop-out respondents were in full-time employment. Fifty per cent of the respondents had received a supportive attitude from their employer towards their enrolment. Less than half (43%) had their fees paid and one week or less paid study leave was granted to 60%.

(e) *Reasons for drop-out*

Over half (56%) left the course in First Arts (Year 1) and almost a quarter (22%) left in Year 2. Reasons cited for leaving included personal problems, family and business commitments, lack of finance, course structure and work load. However, over half (57%) stated that they intended to finish the B.A. course at a later stage. Despite their not having completed the course, 55% of the drop-out respondents agreed that enrolling as a mature student was an advantage and 91% found going to University was a "very worthwhile" or "worthwhile" experience.

3. Staff

(a) *Role of the University vis-a-vis part-time mature students*

When questioned as to the role of the University vis-a-vis part-time mature students, over half of the staff respondents (60%) felt that the University's role was a central one. Just over 40% felt that such provision was peripheral to the main function of the University. Staff were strongly supportive of the participation by part-time mature adults in undergraduate courses, but still regarded such responsibility as an appendage or supplementary to the main role of the University.

(b) *Contrast between part-time mature and traditional students*

Staff generally felt that the higher motivation of the mature students was one of their greatest assets. They were also impressed by their conscientious and hard working approaches towards their studies. Due to maturity and life experiences, the students generally, were seen to be more confident, able to see the course in a broader perspective and were more communicative than the traditional students.

(c) Approaches to teaching

Over half (53%) of the staff believed it was necessary to adopt a different approach to that used in teaching younger students. Some felt that there was a need to help and orientate mature students who faced problems of assimilation into such a programme. Others saw the need for greater flexibility of approach to teaching and assessment to allow for their backgrounds, maturity and experiences.

(d) Expectations of part-time mature students

Staff were asked if they considered that the expectations of mature students were different to those students who come to University straight from school. Over half (59%) believed that the mature students have different expectations and that they are subject to a number of competing demands on their time, not all of which are academic. Staff were also of the view that mature students were, in general, more highly motivated, had clearer goals and more positive attitudes to study than the generality of younger students.

(e) Standards achieved by part-time mature students

Staff were given the opportunity to comment on the standards achieved by mature and traditional students. Most of the staff were impressed by the performance of part-timers and based on their examination results, 76% felt they should be given the option of pursuing an Honours B.A. Degree. However, less than a quarter (24%) of the staff were opposed to an honours programme and felt that the part-time students tended to have greater difficulty than younger students in coping with academic programmes.

Conclusions and Recommendations

The findings from the review of the literature and the U.C.G. results show that the participants were, in general, under forty years of age. The most significant determinant of participation was the amount of education already completed and previous attendance at a third level college was a characteristic of the participants. Members of the working class, unemployed, retired and educationally disadvantaged were significantly under-represented. High motivation and maturity contributed to the examination success of the participants. Most students deeply appreciated the opportunity afforded to them to continue their education to degree level and were satisfied with the format and standards of the course. Staff were very positive in their desire to encourage even grater participation by mature students in continuing education.

There is a need for institutes of higher education to be concerned about students not completing courses and to provide adequate counselling facilities for all students. Course withdrawal, or temptation to leave was greater in the early stages of courses, and lack of finance was one of the factors which contributed to student withdrawal.

The marginal status of adult education in Irish Universities reflects the position internationally. The education and training of mature students on a part-time basis is not recognised as being a central function of the Universities. Facilities for continuing education throughout life ought to be available to all citizens and institutes of higher education must play their part in such provision.

Because adults differ from traditional undergraduates in their expectations, motivation and life experiences, a more flexible approach to their development is required. Rules and regulations which may be suitable for full-time younger students, may not be appropriate for those who have commitments and roles to perform, other than those associated with that of the full-time undergraduate. Many mature part-timers do feel that they are sometimes treated as "second-class citizens" in terms of facilities in registration and payment of fees.

An adult-centred approach to the teaching of mature part-timers, more flexibility with regard to registration, timing of classes, payment of fees and opportunities and facilities on a par with those offered to traditional undergraduates are required, if equality of access and treatment is to be provided for adults within our Universities. Their motivation and commitment, the sacrifices they are prepared to make in order to return to education are examples to all who are involved in third level education. The maturity and experience which they bring with them to our colleges certainly enhances the learning society and ought to be matched by a deeper commitment by the authorities of our third level institutions to their development.

If third level institutions are concerned about equality of opportunity, there is a need for them to encourage those, whose lives have been circumscribed culturally, socially and financially, to participate in higher education. One valuable factor in recruitment would be the nationwide development of appropriate access courses.

The implementation of paid educational leave and the availability of a comprehensive grant scheme for mature students is essential. Continuing education must develop in response to local and national needs. Third level institutions need to be more directly involved with students from school leaving age to retirement, and governments must treat the education of all adults as an integral part of the State's provision for education.

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HOW GENERAL ABILITY INTERACTS WITH INSTRUCTIONAL METHODS TO PRODUCE DIFFERENT LEARNING OUTCOMES

Brenda Sugrue and Bridie Barnicle

Theoretical Framework

In the late 1950s and early 60s, much research was conducted to test the hypothesis that discovery learning leads to more active cognitive processing, better retention and farther transfer than does expository instruction. The hypothesis grew out of the cognitive theories of learning, such as that of Bruner,[1] which were in vogue at the time. The early studies on discovery learning led to inconsistent findings and were wrought with conceptual, methodological, and semantic problems.[2] The role of individual differences in learning from instruction was ignored, and there was a lack of consistency in the definition and labelling of independent and dependent variables.

In the past two decades, there have been significant advances in learning theory and research on instructional methods, minimising many of these problems. The most important developments will now be described.

Cognitive Theories of Learning and Transfer

Recent cognitive theories of how knowledge is acquired, stored in memory, retrieved, and used have led to a focus on transfer of learning and on the relationship between acquisition processes and subsequent levels of transfer of knowledge. The degree to which knowledge can be used in new contexts has become the operational definition of the degree to which the knowledge has been actively processed and stored in generalisable form. The greater the extent of transformation of existing memory structures to accommodate new information, the greater the subsequent ability to transfer the newly-learned knowledge to novel situations.[3]

Aptitude-Treatment Interaction

It has been concluded, from aptitude-treatment interaction (ATI) research, that no instructional method can be said to have absolute effects on the learning processes of students or on subsequent recall and transfer performance.[4] Acquisition processes and performance outcomes result from the interaction of instructional method with learner characteristics and learning task characteristics.[5] Learner characteristics, such as prior knowledge, level of general ability, and motivation interact with instructional method to produce different types of cognitive processing, knowledge structures in memory, and performance outcomes.[6]

Instructional Methods

The concepts of high and low cognitive load instructional methods have been defined. High load instruction places a high information processing burden on the learner, who must him/herself render the information more meaningful and transferable. Expository instruction, such as that involved in the traditional lecture, is generally a high load method because it presents information to learners without any attempt to induce or monitor, in individual students, the kind of cognitive processing that would be necessary to reorganise and integrate the information in a meaningful way.

New load instruction provides the cognitive processing support necessary to integrate new information with old. Carefully structured activities are used to force learners to engage in active mental processing.[7] Learning in this manner facilitates the later retrieval, use, and transfer of knowledge to novel problems.[8] Low load methods model, or compensate for, the kind of cognitive processing that is required to become expert in a particular task domain. Some guided discovery instructional methods, such as interacting with analogical models or simulations are low load methods because they force learners to test their existing knowledge in relation to a task, only to find out that there are gaps in that knowledge.[9] The awareness of a "gap" or misunderstanding represents an opportunity for learning and the learner will actively modify his/her existing knowledge.[10]

General Ability

It now appears that the essence of general ability is the ability to adapt existing knowledge to novel and complex tasks or problems. Learners with higher general ability appear to spontaneously use analogies and construct more general procedures during learning and problem solving than do learners with lower general ability.[11] Learners with higher general ability are more likely to engage in the elaborative encoding, reorganisation and continuous testing of their "provisional assemblies."[12] Learners with lower general ability rely on simpler connections and non-semantic forms of elaboration such as maintenance rehearsal; their strategy demands more attention and memory resources and leaves stored knowledge highly susceptible to interference from subsequent inputs.

Disordinal Interactions

Recent re-examinations of ATI research in the light of cognitive theories of learning have led to the discovery of a pattern of disordinal interactions: instructional methods that seem to promote learning and transfer among learners with low general ability appear to depress the learning of learners with high ability.[13] It seems that instruction that provides too much support for learning inhibits or interferes with the existing strategies of learners with higher general ability to integrate and reorganise knowledge for themselves. Learners with higher levels of general ability do especially well under instruction that is significantly incomplete in terms of the support for cognitive processing provided, because it affords them opportunities for the spontaneous "active retrieval and adaptation of old assemblies and, particularly, the invention of new assemblies,"[14] without imposing a strategy for doing so.

Less is known about the type of instructional conditions that best help learners with lower levels of general ability to adapt and construct new assemblies/procedures. The concrete analogical models and verbalisation techniques employed by Mayer are an attempt to make explicit for learners the processes that high ability learners engage in spontaneously.[15] Mayer's findings indicate that such externalisation of effective acquisition processes are most effective in promoting transfer of knowledge for learners with low general ability. Many other studies, such as those by Yalow[16] and Gray,[17] have compared the effects of high and low load instructional methods on learners with different levels of general ability, and have obtained results similar to those of Mayer.

Need for Research

There is a need for research to identify, more precisely, the nature of the interaction between the general ability of learners and the level of support for cognitive processing provided by instruction. Previous ATI studies have not controlled for differences in the prior knowledge of learners in relation to the learning tasks employed. Neither have previous ATI studies measured a variety of levels of transfer outcomes. The study reported here sought to improve on the design and methodology of previous ATI studies by selecting a learning task that would not be affected by prior knowledge, designing treatments that differed only in the degree of external support for cognitive processing provided, and measuring two transfer outcomes. The general hypothesis tested was that level of general ability interacts significantly, and in a disordinal manner, with instructional method. More specifically, learners with higher general ability achieve higher levels of transfer with expository instruction (a high cognitive load method); learners with lower general ability achieve higher levels of transfer with discovery instruction (a low cognitive load method). In other words, discovery/low load instruction compensates for lack of existing ability to transfer, but interferes with higher aptitude for transfer.

Method

Subjects

The sample consisted of 80 volunteers from the first year students at Thomond College of Education, Limerick, Ireland. Subjects were matched on level of general ability and each matched pair was randomly assigned to treatment groups.

Learning Task

In order to minimise the effects of prior knowledge, a "meaningless" or "laboratory" type task, Challenger, was selected for the purposes of the study. The task has two main features: patterns (512 possible) and operations (3 possible). Challenger is a computer-based two-dimensional "puzzle" or set of tasks consisting of a 3 x 3 square matrix of cells, each cell being either green or white. The goal of the task is to change the pattern from an arbitrary arrangement of green and white cells to a matrix consisting of a single white cell surrounded by eight green cells:

G G G
G W G
G G G

Due to the symmetrical nature of the matrix, three distinct moves are possible:

1. if the cursor is on a corner cell, then that corner cell and three cells surrounding it change colour;

2. if the cursor is on the middle cell of any side, then all three cells on that side change colour;

3. if the cursor is on the centre cell, then that cell and the middle cell on each side of the matrix change colour.

For the purposes of this experiment, instruction focused on a subset of the solution paths from three initial patterns, each requiring a minimum of six moves to be transformed to the goal state. The initial patterns of two of the paths were instances of one general pattern. The paths leading to the goal from these patterns would facilitate abstraction of more general rules for solving Challenger.

Treatments

The two instructional methods designed for use in this study were similar in the following respects:

1. Initial information provided about the goal of the task; the operations, i.e., moves, permitted to attain the subgoals/goal of the task; and the entire sequence of moves to solve Path 1.

2. Initial opportunity (practice) to acquire knowledge of the moves and their effects on the "state" of the task.

3. A progressive part method of instruction, working backward from the goal state.

4. The learner was restricted to one particular move in cases where there was an alternative move which would also lead closer to the goal.

5. No explicit reference was made to the symmetrical nature of the task.

The instructional methods designed for this study differed in the following manner. The expository instructional method was a high cognitive load method which provided complete information about the steps in each procedure together with practice, but little opportunity for error and no corrective feedback other than a display of the correct move when an incorrect move was attempted. The discovery instructional method was a low cognitive load method which initially presented incomplete information about the steps in each procedure and forced the learner to actively construct the steps through a process of trial, error, and implicit feedback. Learners in both treatment groups were able to perform the sequence of steps in each procedure without error at the end of the instructional programme. A more complete description of the two computer-based training programmes is available in Sugrue (1989).

General Ability Measure

Following Snow and Lohman's argument,[18] scores on the paper folding test from the Educational Testing Services set of Cognitive Reference Tests were used as the measure of general ability in this study. Reliabilities for the paper folding test vary from .76 to .93.[19] In this study the reliability (Cronbach's alpha) was .80. Work by Snow establishes the validity of the test as a measure of Gf.[20]

Outcome Measures

Two outcome measures were employed: near transfer and far transfer. Each test consisted of 3 items, i.e. paths. A time limit of seven minutes was imposed on each item in each test. Neither of the tests required transfer beyond the domain of Challenger. The initial patterns of the three near transfer items were either intermediate patterns or rotations of patterns in the paths on with instruction was provided. Thus, they were testing mastery of the basic skills required for expertise in the Challenger task. The three far transfer items required generalisation of those basic skills to solution from previously unseen initial patterns.

For each item in each test, solution or non-solution, number of moves made, and sequence of moves made during solution of the item were recorded by the computer. These data were used to form continuous measures of near transfer and far transfer of the procedures learned during instruction. The range of scores on any item was from 0 to 20. Since each test consisted of 3 items, the range of scores on each test was from 0 to 60. A full description of the formation of the continuous dependent measures is available in Sugrue.[21]

Analysis Procedure

The main hypothesis (that there would be a disordinal interaction effect between instructional method and general ability on the dependent variables) was tested using hierarchical multiple regression (following the stepwise procedure outlined in Pedhazer).[22] Hierarchical multiple regression is based on the correlations between a number of independent (or "predictor") variables and one dependent variable. Since there were two dependent variables in this study (near transfer and far transfer) two separate regressions were done, one with near transfer as the dependent variable, the other with far transfer as the dependent variable. In this study the independent variables were the treatment (instructional method), general ability, and the interaction between them. Each independent variable is added in turn to an equation and the resulting multiple correlation (R^2) is observed and tested for significance. The actual statistical tests are partial F-tests; an overall F-test is also performed on R^2 when all of the independent variables have been added, including any interactions between variables.

If R^2 is significant after an interaction has been added to the equation, it means that the correlation between the continuous independent variable (in the case of this study, general ability) and the continuous dependent variable (in the case of this study, either near transfer or far transfer) is significantly different for each treatment group (in this case for the discovery and the expository treatment groups).

The next step is to plot the regression line for each treatment group (each line represents the correlation between the continuous independent variable and the dependent variable) and calculate the point at which the lines intersect. One can then make predictions about the outcome (in this study the transfer score) one can expect for a learner with a particular aptitude (in this case level of general ability) if he or she receives one treatment or the other (in the case of this study, if he or she is exposed to expository or discover instruction).

Results

Before presenting the results of the main regression analysis, some information on the general ability levels of students in each treatment group, and descriptive statistics for each of the two dependent variables, are presented.

General Ability

There was no significant difference between the means ($t = .13$; $df = 78$; $p = .894$) or variances ($F = 1.65$; $df = 1, 78$; $p = .121$) of the general ability scores for the two treatment groups.

Descriptive Statistics

Table 1 presents the mean and standard deviation on each dependent variable (near and far transfer) for each treatment group (discovery and expository) and for the total sample.

TABLE 1 — Dependent variables : Descriptive Statistics

	Mean			SD		
Variable	Disc (n=40)	Exp. (n=40)	Total Sample (n=80)	Disc. (n=40)	Exp. (n=40)	Total Sample (n=80)
Near Transfer	35.79	34.32	35.06	13.21	17.33	15.33
Far Transfer	14.55	8.80	11.67	15.18	9.09	12.76

Regression Analysis

Table 2 presents R^2 (as each successive independent variable was entered in the equation) and the overall f-test after all of the independent variables had been entered, first with near transfer as the dependent variable, and secondly with far transfer as the dependent variable. In the case of near transfer, R^2 was .26 which was significant at the .0000 level; this meant that the variables general ability, instructional method and the interaction between them accounted for 26% of the variance in near transfer. In the case of far transfer, R^2 was only .079 which was not significant; this meant that the independent variables in this study accounted for only 8% of the variance in far transfer.

TABLE 2 — Summary of results for stepwise regressions

	R^2 for Successive Independent Variables Entered					
Dependent Variable	T	A	T*A	Overall F-value	df	p
N	.0023	.2238	.2637	9.07290	3,76	.0000
F	.0513	.0796	.0798	2.19690	3,76	.0953

T = treatment
A = general ability
T*A = interaction
N = near transfer
F = far transfer

The partial F-tests for the significance of the relationships between individual independent variables and each of the two dependent variables are presented in Table 3. The results will be summarised, firstly for near transfer and secondly for far transfer.

TABLE 3 — Partial F-tests on single independent variables

Dependent Variable	Independent Variables Entered	F	df	p
Near Transfer	T*A/T,A	2.030	1,76	.0459**
	A/T,T*A	5.020	1,76	.0000**
	T/A,T*A	2.072	1,76	.0417**
Far Transfer	T*A/T,A	129	1,76	.8974
	A/T	1.538	1,77	.1280
	T/A	2.048	1,77	.0440**

T = treatment
A = general ability
T*A = interaction
/ = "after"
** = significant at or beyond .05 level

Near Transfer

Each of the independent variables and their interaction was significantly related to near transfer. The significant interaction meant that the relationship between general ability and near transfer was significantly different in the two treatment groups. A separate regression equation was formed for each group (the expository group and the discovery group) and the point of intersection of the two lines was calculated:

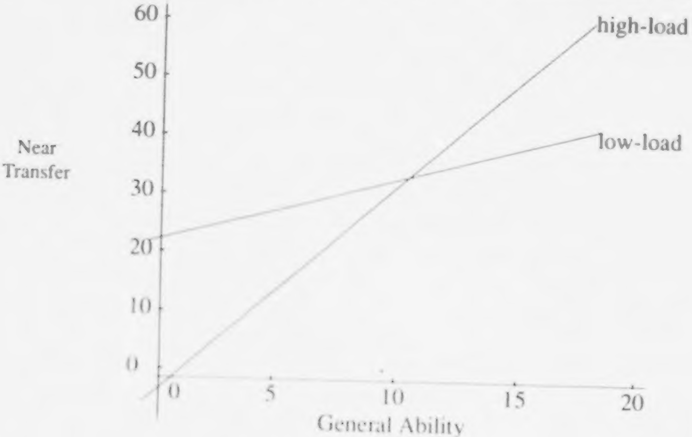
Equation for expository group:
Near Transfer = -5.739012 + 2.897578 (General Ability)

Equation for discovery group:
Near Transfer = 22.01009 + .98958 (General Ability)

The point of intersection: 14.543357

Figure 1 shows a plot of the two regression lines. The discovery treatment was superior for students with lower levels of general ability (up to 14.5), while the expository treatment was superior for students with higher levels of general ability (from 14.5 and up).

Figure 1 — Regression of near transfer on G for each treatment group



Far Transfer

There was no significant interaction effect between the two independent variables on far transfer (partial F = .129; df = 1, 76; p = .8974); this meant that the relationship between general ability and far transfer was similar in both treatment groups. The only independent variable that was significantly related to far transfer was instructional method (partial F = 2.048; df = 1,77; p = .0430); this meant that there was a significant difference between the far transfer scores of the two treatment groups. The discovery treatment produced higher levels of far transfer (mean = 14.55, SD =` 15.18) than did the expository instructional method (mean = 8.80, SD = 9.09) regardless of level of general ability of the students.

Discussion

The findings of this study concurred with much of current theory and previous research. In particular, the relationship between general ability and near transfer was much more pronounced when the instructional method placed the burden of cognitive processing on the learners themselves, than when support for appropriate cognitive processing was embedded in the instruction. Although the expository treatment broke the task down into its component steps, demonstrated the correct behaviour at each step, and allowed the learners to practice the correct steps until they could reproduce the six steps in sequence, it did not encourage the learners to abstract more general heuristics for solving

Challenger problems. The discovery treatment may have forced all learners to interpret each new step towards solution of Challenger by violating their expectations about the next move. Learners saw the results of the erroneous moves they made and had a chance to "find" the correct move, thereby integrating it more with their existing knowledge and rendering the procedure more generalisable. However, the expository instructional method was more appropriate for learners who had the general ability to make such generalisations without any support.

The finding that the discovery treatment led to greater far transfer for all learners, regardless of general ability, seems to contradict the theory that instructional methods that provide support for cognitive processing depress the transfer scores of learners with higher general ability. However, it is consistent with Snow and Lohman's conclusion that the pattern of disordinal interactions between general ability and instructional method becomes less apparent as the level of transfer increases. In the case of the present study, this finding should be viewed with caution because the scores on the far transfer test were extremely low, indicating that, for the amount of instruction and practice provided, the far transfer test was much too difficult. Nevertheless, this finding could lead to the hypothesis that when farther transfer of knowledge is required after instruction, then external cognitive processing support during initial learning is beneficial for all learners, regardless of general ability. This hypothesis may hold only for farther transfer *within* a particular domain of knowledge; it appears that general ability *is* related to transfer of knowledge *between* domains (Corno & Mandinach).

The results of this study lend support to the theory that the completeness of the cognitive processing support embedded in instructional methods is important in relation to disordinal ATIs. The results also lend further support to the theory that ability to transfer knowledge is a function of type of cognitive processing during learning. In terms of prescription for the design of instruction, this study indicates that when the desired outcome is near transfer, and learners have lower levels of general ability, then low load instruction is best. If the learners are higher in general ability, they need little or not support for cognitive processing. However, more external support for cognitive processing may be required by all learners if farther transfer within a domain is required.

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INTEGRATING EQUAL OPPORTUNITIES IN THE CURRICULUM OF TEACHER EDUCATION 1988-1991 : TENET PROGRAMME DISSEMINATION PHASE

Sheelagh Drudy, Hugh Gash, Kathleen Lynch, Pádraig Ó Láimhín,
Richard Moles, Claire Lane, Máirín Ganly, Cynthia Fogarty,
Gráinne O'Flynn, and Arthur Dunne.

Introduction

The *Tenet* programme is the result of the response of the Association of Teacher Education in Europe to a 1985 resolution by the EC Council of Ministers for Education. The Resolution recommended that an action programme be implemented in EC countries to ensure equal opportunities in education for boys and girls. This programme would facilitate equal access to all forms of education and training. It would enable girls and boys to make educational and career choices which would afford them the same employment and economic opportunities. It would, further, motivate girls and boys to make non-traditional choices and encourage girls to participate as much as boys in new and expanding sectors within education and vocational training. An essential part of this proposed EC action programme was the question and pedagogics of equal opportunity in teachers' initial and in-service training. It was felt that there was a need to raise teachers' awareness of gender-related issues. Accordingly, Guidelines for Action were prepared by the ATEE and presented to the Commission of the European Communities (Arnesen and Ní Chárthaigh, 1987). Project proposals were invited from teacher education institutions and organisations in all EC countries. Projects were to be jointly funded by the Commission and by the Ministries in member states.

In the Republic of Ireland five projects received funding in 1988/89. The first phase of these projects was completed in June, 1989. All projects received funding for the second phase — 1989-1990. A sixth project was added to the original five in the second phase. These projects have now received funding for a third year, the dissemination phase.

Two of the projects are concerned with preservice education. One of these, directed by Dr.Hugh Gash, at St. Patrick's College, Drumcondra focuses on primary teachers. The other directed by Kathleen Lynch at University

College, Dublin, involves second level student teachers. The remaining projects are inservice ones. One of these, directed by Dr. Pádraig Ó Láimhín at the Department of Education involves primary teachers. The other three are post-primary projects. These are located at Thomond College (Director : Dr. Richard Moles), the Teachers' Union of Ireland (Director : Mr. Peter MacMenamin); and the sixth project run by the Institute of Guidance Counsellors (Director : Mr. Arthur Dunne).

In each member state coordination of the projects is carried out by a representative of the Department/Ministry of Education. In Ireland the National Coordinator is Ms. Hilda McHugh of the Department of Education. There is also project coordination at European level. The very important post of European Coordinator is held by an Irish representative — Dr. Dearbhal Ní Chárthaigh of Thomond College of Education, Limerick.

From the outset, evaluation of the projects was seen to be the key to successful outcomes. Each project director carried out detailed internal evaluation of the interventions. In addition, an external evaluator was appointed: Dr. Sheelagh Drudy, St. Patrick's College, Maynooth. The approach to evaluation has been to adopt a variety of modes, both qualitative and quantitative. The primary focus is on the impact of the interventions on teachers' attitudes.

Two alternative underlying philosophies are to be found among the six projects. In two of the projects emphasis is on attitude change as a prerequisite for behavioural change in the classroom. In the remaining four projects the assumption is that an alteration in classroom behaviour and in the curriculum can bring about attitude change and thus affect future behaviour. The external evaluation procedures used included visits to schools, semi-structured interviews, lesson observation, participation in workshops, and a post-programme survey of all participating teachers.

External and internal evaluation revealed very high levels of motivation among participating teachers. By the end of the first phase of the action programme there were very positive attitudes towards gender equality among the majority of participants. Evaluation also showed improved levels of awareness of equal opportunities issues among teachers. However, the importance of preservice and inservice education on gender related issues also emerged. None of the inservice teachers had had any kind of formal training in this area. This programme of action research, and research done elsewhere, indicates that teacher attitude is one of the crucial dimensions in both the reproduction of and in the changing of sex stereotyping.

CHILDREN'S GENDER PERCEPTIONS AND THE CURRICULUM

St. Patrick's College, *Tenet* Project : Director, Hugh Gash
assisted by Mark Morgan and Ciaran Sugrue.

The purpose of this project was to measure children's sex role stereotypes at the primary level and then to try to change these stereotypes with appropriate classroom procedures, and finally to develop teaching materials. The theoretical approach taken was based on "Piagetian" theories of cognition. The gender stereotypes which were considered were children's perceptions about behaviour.

Phase 1

Data were collected from 873 children in a sample of 36 Irish primary classrooms stratified by age (5, 8, 11 years), location (urban, rural), and 3 types of school (single gender, or mixed), and treatment (experimental, control). Information was also sought on the child's ability and the mother's educational level and employment.

The teachers were given materials prior to the intervention period. They were asked to integrate the topic of sex stereotyping appropriately into their lessons each day during a period of five weeks. The teaching strategies were indirect, child centered, and sensitive to the child's identity (Gash, 1989); they emphasised probing and questioning (across the different curriculum areas) rather than providing guidelines about the correctness of different ideas. Amongst the interventions which were suggested to the teachers were a questioning technique called "distancing," and a modelling technique designed to familiarise children with people in non-typical occupations.

Distancing is the process of coming to more complete understandings of experience. Teachers can ask certain types of questions which will allow the children to focus on experiences to refine their thinking. Distancing behaviours include evaluating. They all require the child to go beyond the information given and to reflect on their experiences (Sigel and Cocking, 1977). Essentially the aim of these questioning strategies was to provide the child with opportunities for cognitive conflict.

Use was also made of models of counter stereotypically employed persons including female army officers, ban gardaí, female veterinary surgeons, and male nurses. The control groups engaged in their normal class activities and the teachers were encouraged not to discuss gender stereotyping for the duration of the experimental period. The children were pretested and post-tested using a test of gender perception which had been used previously in Ireland. Best et al (1977).

Comparison of the stereotype score in 1989 with the scores reported for 1975 indicated awareness has increased. There was no significant effect on stereotype score of mother's educational level or employment status. There were no significant differences for pupil gender or for location (rural or urban). There were significant differences for age and ability (increases being associated with greater awareness of the stereotype), and for type of school (with all boys' schools exhibiting greatest awareness of stereotyping, all girls' schools the least, and mixed schools in between). Overall the experimental treatment did not significantly alter the children's awareness of stereotypes except in the urban sample with the youngest children. However, (with hindsight), the appropriateness of a forced choice binary measure can be called into question. It would have been better to assess change by using a five point scale. This latter strategy was used in Phase 2 of this project (1989-1990).

Phase 2

In Phase 2 fifteen student teachers took a course in their final year which included a substantial component on gender stereotyping. As part of their work they developed materials for use in schools to provide children with the opportunities to reconsider their understandings of stereotypes. Considerable quantities of materials were produced and distributed to participating teachers, 997 children were tested, and a video describing the project was made. The results of the testing programme on these children showed that the educational strategies used significantly lowered the gender stereotypes of the children in our programme. The other findings were similar to those found in Phase 1 of the project. Project members were active in disseminating the results at conferences and seminars nationally and internationally.

Our concept of equal opportunity is founded on the need to respect our differences which follows from a constructivist epistemology. In other words — we all perceive the world somewhat differently, so we must learn to respect our various efforts to put this perception into language. Our disagreements are at the level of explanation and so if "true" representation is seen to be a fiction, and unattainable, it is easier to disagree agreeably with mutual respect.

WORLDS APART : GENDER INEQUALITIES IN EDUCATION AND WAYS OF ELIMINATING THEM

UCD *Tenet* Project : Director, Kathleen Lynch.

Aim of Project

The principal aim of the UCD project was to develop an awareness and understanding among preservice second-level teachers of the nature of gender inequalities in education and to identify with them ways of eliminating these. Throughout the project we tried to develop students' awareness of the interrelationship between gender, social class and other inequalities.

To achieve these goals, research was undertaken to develop the relevant course material. Material was developed for a 20 hour lecture/seminar programme which specifically focused on gender inequalities in education. While the issues addressed in the programme varied slightly between Phase 1 and Phase 2 of the project, the following areas formed the core of the teaching programme. At all times an attempt was made to take a holistic equality approach to the questions involved.

Course Themes

1. An exposition of various theories explaining women's subordination to men.
2. The educational implications of patriarchal knowledge.
3. The formal curriculum : problems of sexism in particular subjects with special reference to Irish schools.
4. Scientific and technological education: Why are girls alienated? What can be done to change this?
5. The Hidden Curriculum and the reproduction of gender inequalities: an analysis of how school organisation and classroom interaction can reinforce gender stereotypes. What can we do to change this?
6. Men, masculinity and sexism in schools: A focus on the stereotyping of boys.

7. The interrelationship between gender, social class and racial inequalities in schools.

8. Co-education or single sex education: Does it make any difference in promoting equality?

The Outcome and Evaluation of the Project

The Course was offered as an optional unit within the second-level preservice teacher education programme (Higher Diploma in Education); 51 students participated over the two years.

An experimental model was adopted to assess the success of the project. Students were pre-tested in terms of three sets of gender related attitudes prior to undertaking the course and again after its completion. A control group from the student-teachers who did not take the course was tested along similar lines. In both Phase 1 and 2 of the project we found that the students who had taken the Gender Course were significantly more aware of sex discrimination in education, and were noticeably stronger in their belief in sex equality (significantly so in Phase 1 but not in Phase 2). In terms of their factual knowledge of gender issues in Irish education, the Gender Group were far ahead of the Control Group after they had completed the course. In both phases of the project the students who opted to do the Gender Course were slightly more aware of gender issues than the Control Groups prior to doing the course. These differences increased dramatically, however, after the Gender Group completed the course.

Finally, as a result of the project, awareness of gender and related inequalities has increased considerably among the staff of the Education Department; there are two core courses where gender issues are being addressed now where they were not covered hitherto. In addition, the course of lectures developed during the project will continue after the project finishes.

Finally, the *Tenet* project gave an important impetus to the new Equality Studies Centre in setting up its Masters and Diploma programmes in Equality Studies. The latter are focused exclusively on equality issues relating to gender, social class, minorities and global North/South divisions.

TOWARDS IMPROVED ACCESS TO THE WHOLE SPECTRUM OF THE WHOLE CURRICULUM FOR GIRLS AND BOYS

Department of Education *Tenet* Project : Director, Pádraig Ó Láimhín
assisted by Hilda McHugh, Sean MacConmara
and Clár Uí Breasláin.

The Department of Education's particular project operates at primary level and concerns itself with the inservice education of primary teachers. It is now in its third year. Administered from the Department's Curriculum unit and managed by a Project Team composed of four Primary School Inspectors assisted by a Steering Committee representing all professional interests involved, it targets primary teachers, aiming to raise their awareness of the issue of equal opportunities, to prepare guidelines and resources for their use in schools, to develop a module for their inservice education and to initiate and conduct for them inservice courses of one week's duration.

Using existing structures, it operated in its first year in seven schools broadly representative of Irish primary schools in general and involved 85 teachers and about 2,500 pupils between the ages of four and thirteen years and in its second year in twenty-one schools (including four in Northern Ireland) involving 185 teachers and about 5,300 pupils. Two teachers acting as research assistants to the project surveyed relevant literature and made available background information, teaching strategies and assessment procedures for use by participants.

Evaluation was carried out by participants and by members of the Project Team. Participating teachers carried out initial, formative and summative evaluation of themes, Principal Teachers evaluated schools, members of the Project Team visited participating schools, Boards of Management and parents informally evaluated projects locally and the project Director, the National Evaluator, the National Coordinator and the European Coordinator provided reports. Initially informal approaches were made to selected schools. Thereafter, Principal Teachers and Chairpersons of Boards of Management were formally invited to participate in the project, schools' profiles were sought, research materials supplied and half-day seminars held in all participating schools.

Teachers involved in Phase 1 of the project, either individually or as members of groups of staffs, chose a managerial, organisational or curricular area for examination, set out inequalities perceived to exist within the chosen area, planned strategies for the elimination of perceived inequalities, tested these strategies in the classroom and reported to the Project Team. During Phase 1 inequality of opportunity was identified by teachers involved in the project in relation to the following issues:

1. broad issues (school management, the single-sex school, home-school-community relationships);

2. curricular issues (access, participation, teacher and parent attitude and expectation, pupil self awareness and self perception);

3. school/classroom management issues (school and classroom organisation, discipline, interpersonal relationships);

4. child development issues (cognitive, emotional and social development, subject choice, socialisation patterns, personal qualities, personal skills).

During Phase 2, schools acting individually or in cooperation with other schools concentrated on deepening awareness of gender inequality in agreed curricular areas. In all instances, corrective action was proposed, planned and put to the test in the classroom. Levels of motivation and participation were high among all concerned (teachers, pupils, management and parents) and the project was seen to be both necessary and worthwhile.

The awareness of primary teachers was raised on the issue of equal opportunities. Draft guidelines, resources and a draft inservice module were produced and an inservice course of one week's duration was provided involving speakers from the Employment Equality Agency, the Irish National Teachers' Organisation, the Universities of Maynooth and Coleraine, the National Parents' Council, the Department of Education Inspectorate, the Project's Research Team, a Researcher and participating schools. At the end of Phase 2, a three day Seminar was attended by members of the Primary Inspectorate. The project corresponded with other projects in Europe and was represented by the Project Team at the ATEE Annual Conference, 1990. The basic concept of equal opportunities arising from the project is stated as follows:

> girls and boys should have equal access to all aspects of the primary curriculum, equal treatment in all aspects of their school lives and equality in the provision of opportunity for self-development and self-fulfilment in the course of their primary education.

THE EXAMINATION OF EQUAL OPPORTUNITY THROUGH SECOND LEVEL GEOGRAPHY TEACHING

Thomond College of Education*Tenet* Project : Director, R. Moles
assisted by Claire Lane

Aims and methods

The primary aim of this project was to encourage post-primary teachers and students to explore equal opportunity issues through the medium of geography education. Two major objectives were first, to examine the impact on students of integrating feminist resources into their studies, and second, to analyse the personal and professional experience of teachers who managed this integration process.

The Junior Certificate geography syllabus provides important opportunities for the exploration of equal opportunity issues, and questions on recent Leaving Certificate Examination papers indicate that such issues are to be considered important at Senior Cycle also. It was considered appropriate, therefore, to approach the exploration of equal opportunity through the medium of an action research based curriculum development project.

A total of 31 teachers participated, from twenty one schools in the Dublin and Limerick regions. Schools were all post-primary, both single sex and co-educational, representing all major sectors, and in both urban and rural settings. It was possible, therefore, to compare responses of students and teachers in a variety of socio-economic backgrounds.

In the first year of the project, a group of six self-selected teachers participated in the development of classroom resource materials concerned with aspects of urban, economic and social geography. These were tested in schools, and adjusted in the light of resultant feedback. *Inset* meetings, and visits by Project team members to individual schools, provided teachers with information, guidance and support.

In the second year resource materials were distributed to thirty one self-selected schools. Again *Inset* meetings and visits to individual schools provided a flow of information, guidance and support. Teachers were prepared in the use of evaluation techniques incorporated into the resource pack. They kept detailed records of their students' responses. Teachers made use of this pack mainly in the context of geography teaching, but also in history, civics and religion classes. Evaluation of the success of the project was through the medium of interviews with teachers, and through a detailed analysis of students' responses within evaluatory exercises.

Achievements and constraints

The concept of equal opportunity held by participating teachers was found to be in general conservative in relation to the definition initially adopted by the Project team. While the team were inclined to view equal opportunity as a manifestation of women taking at least as active a part as men in being agents of social and environmental change, teachers tended to limit their definitions to the avoidance of gender bias in the availability of school subjects, and to ensuring that girls were as well qualified as boys to take up employment, or to avail of higher education. In addition, initially the Project team underestimated the indifference (and downright opposition) to equal opportunity issues in the school setting: dialogue with teachers resulted in the team reviewing its initial expectations, so as to render them more realistic and achievable.

Also, initial team expectations regarding the classroom skills and experience of teachers were found to be in part unrealistic. The draft resources produced by the team involved much student discussion and debate, role play and simulation, group and project work, together with teacher administration of a wide spectrum of evaluatory techniques which went beyond tests and worksheets. Team members found a larger than expected proportion of their time being spent in supporting teachers in their experimentation with more innovatory teaching and evaluation approaches and techniques. However, this time was well spent, as teachers adopted innovation with intelligent enthusiasm, and great success.

Teachers were unanimous in finding the final draft of resource materials useful, but many found that timetable and other constraints prevented them from using more than a fraction of the ideas contained within them. Teachers were agreed that equal opportunity issues should be introduced as early as possible in a child's school career, and should be an integral part of education throughout the school career. However, most teachers expressed the view that considerable danger may lie in equal opportunity being viewed as the concern of one subject, or one (especially female) teacher, and a whole school approach to tackling these issues was strongly preferred. Teachers were struck by the level of indifference or hostility to equal opportunity shown by many colleagues and by some male students (especially older students in all male schools). A teacher who was identified as the teacher concerned with gender issues often felt isolated and alone.

Most students in co-educational or all female schools reacted favourably towards lessons based on resource pack ideas, but some teachers were inclined to doubt the sincerity of male students' positive reactions within the classroom, and wondered if private reactions outside the classroom might be less positive. All teachers believed that some good had come of their students working through resource pack ideas: students' awareness of gender issues was considered to have been enhanced considerably. Most teachers believed that given more teaching time, positive shifts in understanding might reasonably be anticipated (except perhaps with regard to some students in all male schools).

Teachers also found that involvement in the Project allowed them to examine equal opportunity issues afresh, and to develop their own thinking. Many confessed that prior to their involvement they had not considered these issues to be important within their teaching. Some male teachers expressed an uneasiness with some issues which arose out of classroom discussion: one teacher worried that it was inherently inappropriate for him to teach girls about equal opportunity.

Conclusions

Without considerable support, it is difficult for serving teachers to make equal opportunity issues important within their teaching. Support may take a variety of forms. Preservice and inservice courses on equal opportunity are required. Further, mutual support through networking is likely to be vital, at least for the foreseeable future. Teachers involved need to avoid isolation within schools by being parts of teams: equal opportunity needs to form part of the ethos of the school, and be addressed by many teachers of many subjects. Active support by school administration especially principals, was considered by teachers to be crucial. Resource materials produced in the course of the Project were found to be appropriate within the Irish context, and might be expected to be transferable within the EC context. Equal opportunity issues must be recognised as essentially contentious in nature. This has major implications for teachers, as the teaching of contentious issues differs qualitatively from what is usually regarded as normal classroom experience.

PILOT PROGRAMME OF INSERVICE EDUCATION FOR TEACHERS ON THE PROMOTION OF EQUAL EDUCATION OPPORTUNITIES

The TUI *Tenet* Project : Coordinator, Máirín Ganly
assisted by Gráinne O'Flynn, Cynthia Fogarty, and Peter MacMenamin

The Project involved the development and implementation of a pilot programme of inservice education for groups of teachers from four schools. Initially, the project team focused on two of the six areas defined by the ATEE (1987) in their curriculum framework for teacher education. These areas were:

— Schooling and career choices.
— Equal opportunities in school.

The encompassing aim of the project was to test the hypothesis that inservice education for teachers within schools, as part of an action-research programme, can effect changes in their attitudes and practices. In this instance, the attitudes and practices centered on the provision of equality of opportunity for young females and males in relation to access to subject areas and in relation to career choice.

Four schools were selected to participate, the basis for selection being an attempt to obtain a broadly representative mix of school types in the public sector: large/small; urban/rural; old/new; community school/vocational school. The participating schools were a large urban co-educational community college established in 1982 (School A); a medium sized rural co-educational community college established in 1966 (School B); a large, urban, co-educational community school established in 1978 (School C); a small rural, co-educational vocational school established in the 1930s (School D). With the exception of the small rural school, three teachers from each school participated in the project. One teacher from the small school participated. The project group was composed of six male teachers and four female teachers.

The model of inservice education adopted for the project was a school focused model. The informing features of this model are as follows:

— the operational mechanisms and needs of each school are taken into account in the design of each school's programme;
— the programme can involve individual teachers, groups of teachers, or a whole staff as appropriate;
— the programme's activities can take place on or off site.

To initiate and develop the project with the teachers, three seminars were held in the Union's Head Office. Meetings were then held in the schools by the participating teachers with their colleagues and the project's Research Officer/Evaluator. Also each of the four Principals included the Project on the agenda for staff meetings because of the perceived importance of involving the whole staff in planning for change.

At the first seminar, the issues for research were outlined, and a research instrument was devised, which was intended to be used by participants to collect information in their own schools. The second seminar focused on the collation of research reports from each school and the identification of possible areas for change. The final seminar was spent in drafting guidelines in the areas of timetabling and organisation, changing teacher attitudes, and parent education.

The main outcomes of the project can be seen primarily in terms of process rather than of product. There has been a demonstrable growth in awareness of equality issues among all staff members, and this is accompanied by an openness to change and a willingness to implement the recommendations of the project, especially those which relate to the timetabling of "option" subjects. A key factor in these positive outcomes was the support of Principals and Vice-Principals, together with the strong commitment of the participating teachers to the aims of the project. An important finding of the project is that while schools can promote greater equality through their organisational structures and practices any changes in these structures must be accompanied by a process of re-education for teachers, parents, pupils and employers.

The second phase of the project aimed to develop further the initiatives of the first phase, in relation to:

- raising awareness of equal opportunities issues among teachers in public-sector second-level schools;
- promoting non-traditional subject choices among pupils;
- assisting schools to adapt their structures so that males and females have equal access to all subjects on the curriculum;
- broaden the scope of the programme through increasing the number of geographical spread of schools involved.

In response to the finding of the first phase of the project that where pupils have an opportunity to sample a variety of "option" subjects for a period in first year, sex-stereotyped choices are reduced somewhat, a major focus of the second phase was the development of sampling modules in certain subjects.

All of the schools which had participated in Phase 1 were involved again in Phase 2 of the project. Because of the subject-based nature of this element of Phase 2, only two of the original Phase 1 group of teachers were involved in this Phase. Working parties were established in four subject areas; Home Economics, Mechanical Drawing, Metalwork and Woodwork. A total of twelve teachers from ten schools participated in the working parties. Six new schools were introduced to the project at Phase 2 through these working parties. As in Phase 1 the basis for selection of participating schools was an attempt to achieve a broadly representative mix of school types in the public sector: urban/rural; large/small; community school/vocational; and old/new schools. Teachers were selected on the basis of an expressed interest in equal opportunities issues, and a willingness to form part of a subject working group. Most of the participants had little or no previous experience in equal opportunity work, and because of the traditional structure of the curriculum in most of the participating schools some would have had little experience of teaching classes in which there were equal, or almost equal, numbers of males and females.

Since most of the teachers involved in the working parties had not been involved in Phase 1 of the project, an introductory seminar was held to which all of the working party members were invited, together with a number of the participants from Phase 1 who agreed to act as resource persons to the working groups at their first meeting. Special attention was given at this seminar to raising awareness of equality issues.

After the initial seminar, the working parties agreed dates for further meetings, and outlined their work plan, in collaboration with the project Research Officer. Groups met on average three times each, and these meetings were attended where possible, by a member of the project team, in most cases the Research Officer. The materials developed by the groups were collated by the Coordinator and Research Officer. These materials will be piloted in project schools, and will be made available to other interested teachers on a pilot basis. Following an evaluation of their use, the materials will be made more widely available for use in all public sector schools. Due to unforeseen difficulties, the work of the Home Economics group was not completed. This work is being followed up in conjunction with Phase 3 of the project and materials will be available in this subject before the end of this school year.

In addition to the outcomes from Phase 1 of the project which were reinforced in Phase 2, it was found that effective curriculum development depends primarily on teacher development which can be accomplished by offering teachers the opportunity to take part in inservice education activities which are adequately resourced and supplied by a credible source. It was also found that groups of teachers, working in conjunction with resource persons who have expertise in the areas of equal opportunities and/or curriculum, can function effectively to devise appropriate classroom materials.

The third phase of the project aims to disseminate the products of Phases 1 and 2 to all other public sector second-level schools in Ireland. A summary report of Phases 1 and 2 which is in preparation will be made widely available, along with the subject materials developed. All education institutions, organisations and interests will also be forwarded copies of the summary report. Phase 3 will also involve further examination of the feasibility of producing a pilot video on equality of opportunity in education aimed at senior primary pupils and their parents.

SELF AND SEX-ROLES : AN AWARENESS-ENHANCING PROGRAMME FOR SCHOOL GUIDANCE COUNSELLORS

Institute of Guidance Counsellors Project : Director, A. Dunne.

The description of this project in a way reflects its emphasis on process and on its intention to stimulate group work between participants so that a fuller understanding of self and sex roles can emerge.

Take a group of second level guidance counsellors, both male and female. Give them a room and that scarcest of resources, time. Encourage them to think, to share experiences, and to talk through key issues in their lives. Make the focus of the process the difference, if any, it has made to their lives that they were born with one set of sexual appendages rather than another. What was it to be brought up male or female, and how is it now to be female or male — in family, in work, in personal, social, and sexual relationships, and in institutional religion? Could such a process influence the professional and personal lives of participants? Could it bring them to a greater understanding of how gender discrimination operates in the world, especially in schools? Might it lead them to a desire to act to challenge some of those gender-based injustices in their own schools? These were some of the questions that the

Institute of Guidance Counsellors sought to answer in its contribution to the *Tenet* EC Project.

Six female and five male counsellors — representative of all school types — met together for seven days of workshops over a three month period. Each workshop focused on one or two themes, the major ones being:

* how sexism hurts both men and women
* role models from childhood
* what it is like to be male/female
* men and women in relationship
* inequalities in education and work
* what schools can do
* owning the male/female within us
* Church and sexism
* sexuality and gender.

These themes were explored through a process of group interaction which used a wide variety of techniques. These included group discussion, role play, art/creative work, lectures, video inputs, co-counselling, and values clarification. Participants were encouraged to avoid theoretical discussion and generalisation in favour of exploration and sharing of personal insights, attitudes and feelings.

Outcomes

The effectiveness of the project was assessed in two ways:

(a) by an objective questionnaire, completed at the start and at the end of the project by participants and by a control group of non-participating counsellors; and

(b) by participants' personal assessments written at the end of each workshop day, and at the conclusion of the project.

The evidence of the questionnaire on Educational Attitudes indicates that significant change did occur within the participating group. Compared to the control group of non-participating guidance counsellors, the project group became significantly more aware of how sex discrimination operates in practice in schools. The participants own evaluation of the project suggests that involvement in the process was a rewarding and energising experience for each individual. With the growth in awareness of gender equality came a strongly expressed desire for action. This was expressed in a number of ways. During the three months of the project, individual participants involved themselves in equality-related issues which, while they were not planned outcomes of the project, were motivated by involvement in the project. Examples were addressing staff meetings on gender issues, reporting to professional colleagues, and involvement in an equality awareness programme for first year male students. At the conclusion of the project the group expressed strong interest in further work together to examine gender issues in their own schools, and to find ways to initiate and promote change.

Issues raised by the project

The power of structured group processes to achieve inservice training objectives was tested in this project and was found to be effective. Participants' responses suggest that it would be even more effective if it was set in the context of a practical agenda for achieving change within participants' schools. In this case developing awareness would have a clear and immediate focus, and the motivation which resulted from the personal explorations of the workshops would be productively channelled.

The project supports the belief that there is a tremendous value in men and women together working on the issue of gender inequality. Each sex needs time separately to explore its own particular concerns, but the sharing of ideas, feelings, and experiences is a powerful context for motivating change. It was clear during the course of the project that the women involved were far more urgent in their exploration of the issues than were the men, although they found it involving and interesting. Educating men and boys to accept change is a key issue, one which seems to control not only the speed of change but also the possibility of fundamental and permanent change. All change is difficult, and where change requires that difficult choices be made, as here, motivation needs to be strong. Men have the power, what reason have they to change? Reasons may be found by hearing women talk about their own experiences, and by taking time to face the damage which sexism does to men.

The project report

The project report offers a detailed description of the project, its administration and evaluation. It gives detailed, session by session descriptions of the group exercises which the participants followed during the workshops, and suggests a selection of those experiences which could form the core of an awareness-raising programme for other groups.

NOTES

1. This paper is based on summaries of the different projects provided by the project Directors and the National Coordinator which, with minor editorial changes, were processed by Hugh Gash for dissemination of information about the work of *Tenet* in Ireland and the EC. An earlier similar paper describing only the first year's work (Phase 1) was presented at the Educational Studies Association of Ireland Conference in Thomond College of Education, Limerick, in March, 1990.

Further information on these projects may be obtained by writing to:

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